



Wilderness on the Edge: A History of Everglades National Park

Robert W. Blythe

Prepared under the National Park Service/Organization of American Historians cooperative agreement



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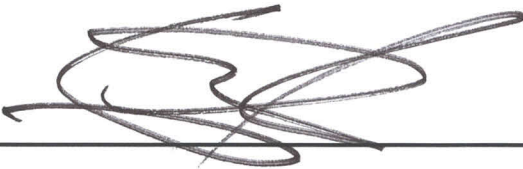
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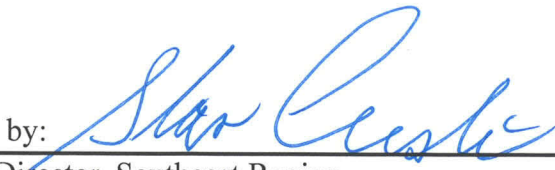
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Preface

Everglades National Park is on the edge in so many senses. The park is at the very edge of the North American continent, at the bottom of a peninsula that may largely disappear beneath the sea during the lives of our great-grandchildren. The park is on the edge of two major metropolitan areas: Miami/Dade County on the east and Naples and surrounding communities on the west. Development and its consequences impact every aspect of the park. More than anything, the Everglades is on the edge because it is perennially threatened. The water it formerly received as surface flow from farther north now comes to it only when the demands of agriculture and urban users have been satisfied. The fate of what remains of the Everglades ecosystem is uncertain and will require close cooperation with a host of land and water managers outside its boundaries. In a broader sense, Everglades National Park hovers near the edge of the conventional definition of a wilderness. It is a wilderness cloven in two by a motor road and visited by tens of thousands of motorboats annually. Nonetheless, the visitor who ventures off the road soon finds himself in a veritable wilderness—a strange and wonderful natural world like no other in the United States.

This book is geared first and foremost to the needs of present and future staff at Everglades National Park and similar park units. It assembles in one document information about the park and its surroundings from many sources, mostly archival. Dozens of books have been written on the Everglades, and many of them touch on aspects of the park's history. This is the first work to focus on the totality of the park's past, and it relies on a number of sources not consulted by previous researchers. In particular, I present new information on the twenty-year campaign first to authorize and then to establish the park. At the park's request, some chapters in this history contain more than the broad overview typical of an administrative history. In Chapters 12, 14, 16, 17, and 25, for example, the narrative is supplemented by more detailed consideration of individual species, hurricanes, historic resources, special events, and the like. The inclusion of this additional material should make the volume a useful ready reference for park staff. My assumption is that many readers will consult this volume to answer specific questions on fairly narrow topics, rather than reading it through. Anticipating this sort of use, I have prepared a thorough index.

My history begins with a brief summary of the Everglades before the organization of a concerted campaign to establish a national park. Chapters 3 through 5 describe that campaign, the park's establishment, and its dedication. Land acquisition and the park's development for visitors are addressed in Chapters 6 and 7. The next two chapters tell the story of the Central and Southern Florida Flood Control Project and its wide-ranging effects through 1990. Water is the lifeblood of Everglades National Park, and park operations can be understood only in the context of the broader South Florida water

situation. Chapters 10 through 27 deal with the various aspects of park operations. Finally, the last chapter addresses water issues after 1990 and the development of the Comprehensive Everglades Restoration Plan (CERP). The progress of the CERP will largely determine the park's future.

I have worked to make a complex story—involving hydrology, conservation biology, agriculture, urban development, politics, and diverse local communities—understandable. Many topics by necessity are treated in summary fashion; I have attempted to direct readers to internal NPS reports and other sources of additional information. Too many administrative histories seem to treat events in a park in isolation, and I have tried to place the Everglades in a broader national context. That approach has contributed to the length of the document; I invite the reader to use the portions of the history that are needed for their particular purpose.

The sheer number of individuals and institutional players in the Everglades drama is daunting. Probably no region on earth has spawned more commissions, task forces, committees, working groups, advisory boards, coalitions, and the like. I hope that I have been somewhat successful in guiding the reader through this maze of organizations and that the capsule biographies in Appendix F will be helpful.

If knowledge of the park's past in any way helps managers to tackle the challenges of Everglades restoration going forward, I will have succeeded with this work.



Figure PR-1, park entrance signs through the years

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I cannot begin to express the extent of my indebtedness to the dozens of Everglades National Park staff members who helped me complete this history. Dan Kimball, superintendent of Everglades and Dry Tortugas National Parks from before the project's inception until March 2014, recognized the importance of the administrative history. He gave freely of his time in an interview, provided me with introductions, and conveyed his support of the project to everyone in the park.

Nancy Russell has no superior in her dedication to the history of the Everglades, her management of the collections center, and her enthusiasm for this history. For four and a half years, we were in contact almost daily, and Nancy has tracked down the most obscure documents, answered the most bizarre questions, and helped me keep up my motivation. On my ten research trips to the park, the collections center staff—Bonnie Ciolino, Jennifer Stafford, Siobhan Miller, Aaron Seltzer, Jenna Edwards, Dianely Martin, Adel Peña, Lynn Moulton, Meg Eastwood, Amanda Gonzalez, and Cheryl Price—have been uniformly helpful and a pleasure to share workspaces and lunch tables with.

I am grateful to all the current and former park staff members who agreed to be interviewed; they are listed in the bibliography. In addition, park staff members have been generous in responding to my questions via email and telephone; these include Fred Herling, Paul O'Dell, Alan Scott, Sonny Bass, Skip Snow, Carol Mitchell, Jimi Sadle, Lori Oberhofer, and Brien Culhane. Several current and former staff members also commented on drafts of the history. I want to thank then all: Nancy Russell, Melissa Memory, Skip Snow, David Rudnick, Jeff Kline, Mike Savage, Mike Jester, Bob Showler, Jason Osborne, Alysson Gantt, Brhow to scroll in word idget Litten, Susan Reece, Tom Iandimarino, Kevin Bowles-Mohr, William Gordon, and Brian Coleman.

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I am hugely in debt to my wife, Madeline Baum. She has prepared twenty-two maps and site plans for this history, which should prove a boon to readers. Further, she has patiently dealt with all of my computer-related issues and supported me through four and a half years of effort. The task was so much easier and more pleasant with her help.

All of the above-mentioned individuals and dozens of others contributed greatly to this complex project. I hope they will be pleased with the resulting history. Any errors of fact or interpretation in the document are mine alone.



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A History of Everglades National Park**

Executive Summary

Executive Summary

Everglades National Park, at 1.5 million acres, contains one of the world's largest expanses of freshwater marsh, as well as pine uplands, coastal mangrove forests, and almost all of Florida Bay. The park's wildlife—colorful wading birds, alligators, crocodiles, manatees—and ethereal landscapes draw visitors from around the world. The area was occupied by native people for thousands of years but only attracted permanent white settlers in the middle of the nineteenth century. Around 1900, initiatives to drain the Everglades for agriculture and preserve a portion of it as a park or natural preserve arose simultaneously. From 1900 into the 1920s, the state dredged several canals that allowed limited agriculture to take place on reclaimed wetlands in the upper Everglades. Hurricanes in 1926 and 1928 revealed the severe limitations of this drainage work. The Florida Federation of Women's Clubs established Florida's first state park at Royal Palm Hammock in the Everglades in 1916 in hopes that it would be the nucleus of a national park. The federation ran and maintained the park with limited state funding until 1947.

In 1928, landscape architect Ernest F. Coe formed the Tropic Everglades National Park Association and began an organized campaign to create a national park in the Everglades. The motivations for this campaign were mixed. Coe was impressed by the aesthetic splendor of the region and its wildlife, wading birds in particular. Others in South Florida looked primarily to the tourist dollars a national park would bring. A handful of scientists wanted the area protected as a biological preserve. The National Park Service (NPS), convinced that the area met national park standards and eager to expand its system in the east, supported the campaign. These efforts culminated in the 1934 federal act that authorized Everglades National Park.

Congress expected the state of Florida to assemble the necessary acreage for the park and donate it to the U.S. for administration. Competing interests in Florida spent fourteen years struggling to reach an acceptable compromise on a minimum boundary for the park. In the 1940s, the efforts of Governors Spessard Holland and Millard Caldwell, business interests led by John Pennekamp of the *Miami Herald*, conservationists like Ray Baker of the National Audubon Society, and NPS officials including Coordinating Superintendent for Southeastern Monuments C. Ray Vinten and Director Newton Drury resulted in a compromise deal for a park considerably smaller than originally sought. The compromise excluded the Big Cypress swamp, agricultural land in the East Everglades, and Key Largo. Park managers would contend with the consequences of these exclusions for decades. As an interim measure, the Department of the Interior in 1945 agreed to administer a portion of the Everglades as a national wildlife refuge. Everglades National Park was declared established in June 1947 after the Florida legislature appropriated \$2 million for land acquisition. President Harry S. Truman dedicated the park on December 6, 1947, in Everglades City.

The same year the park was established, the U.S. Army Corps of Engineers (the Corps) unveiled the Central & Southern Florida Flood Control Plan, a mammoth undertaking designed to allow intensive agriculture south of Lake Okeechobee and protect the urban areas along the Atlantic Coast from seasonal flooding. Florida's business leaders and politicians strongly backed the plan. NPS officials and leading conservationists had serious concerns about the plan's effects on Everglades National Park, but they lacked the scientific data to offer informed comment. With federal and state funding, construction of the plan's main water control features occurred from 1950 to the mid-1960s. When the work was done, the Everglades north of the park was converted from sawgrass marsh into a set of interlinked water conservation areas bounded by levees. The park no longer received water as surface flow but only from point sources—the flood gates in the levees—and only when it did not conflict with the needs of other users. At other times, when there was a risk of flooding, the Corps dumped large amounts of excess water into the park.

As the flood control structures were built in the 1950s, the NPS proceeded to develop the park for visitors. Conservation advocates had placed language in the park's enabling act declaring that the area would be preserved forever as wilderness. NPS planners attempted to follow this mandate while providing visitors with the pleasing aesthetic experiences expected in a national park. Because the NPS judged the existing Ingraham Highway as unsafe and visually uninspiring, a new road was cut running along the northern edge of Long Pine Key that brought motorists to significant natural areas. The NPS planned a visitor center just inside the park boundary on Parachute Key, wayside exhibits and nature trails along the main road, a visitor center and nature trails at Royal Palm Hammock, and a major visitor services complex at Flamingo on Florida Bay.

The complex at Flamingo was to include a visitor center, a marina, a campground, a maintenance area, and staff housing. A major controversy developed over whether a lodge for overnight visitors should be included. Wilderness advocates saw the lodge as inappropriate while Florida politicians and business interests demanded it. The NPS agreed to a lodge when the state made it a condition for donating additional state-owned land for the park.

The NPS's Mission 66 program provided much of the funding for developing the park. The Flamingo facilities opened in 1957, and the Parachute Key visitor center was dedicated in 1961. The park's infrastructure was largely complete by 1965, when a loop road running to a concrete observation tower/fire lookout at Shark Valley was opened. The tower is one the most striking examples of NPS modernist architecture. The current Ernest F. Coe Visitor Center replaced the original Parachute Key visitor center in 1996, and the Flamingo lodge and housekeeping cabins were demolished following hurricanes in 2005. The marina continues to operate at Flamingo, and planning for future visitor services there is ongoing.

In accordance with NPS policy, the government removed permanent residents from the new park, notably the entire population of the fishing village at Flamingo. Miccosukee Indians were permitted to remain in a narrow strip in the park along the Tamiami Trail but had to stop hunting and frogging in the park. The park's first superintendent, Daniel B. Beard, and his ranger staff spent much of the park's early years asserting NPS control over an area that previously had seen little law enforcement. Local whites and Indians were accustomed to freely exploiting the area's resources for subsistence and cash income. Many resented losing their homes in the park and being denied customary uses.

In 1954, the park's boundary was expanded to take in 275,000 acres lying northwest of Lostmans River. The addition took in a portion of the Ten Thousand Islands but deliberately excluded the small communities of Everglades City and Chokoloskee. In the 1940s political compromise, NPS managers had been forced to allow agricultural inholdings to remain in the eastern portion of the park, south of the main park road. Most of the acreage in this area, known as the Hole-in-the-Donut, was purchased and added to the park in the early 1970s. Because the limestone substrate in this area had been partially crushed through rock plowing to allow tomato growing, invasive plants took over when agriculture ceased. Starting in the 1990s, the park undertook an expensive project to restore native vegetation to the area. Marsh vegetation has been restored to more than 4,500 acres and wildlife has returned, but cost considerations have forced the park to indefinitely store the removed soil in spoil piles within the park. The more ecologically appropriate course would be to truck it out of the park.

Little research had been done on South Florida ecosystems and wildlife when the park was established. NPS science budgets were tiny in the 1950s, and many managers resisted the idea of scientists having input into their decisions. The park got its first biologist, Joseph C. Moore, in 1949. The park's second biologist, Dr. William B. "Bill" Robertson, stayed at the park from the mid-1950s until his 1997 retirement. The park's science budget remained woefully inadequate until the mid-1970s, when Nathaniel C. Reed, as assistant secretary for fish, wildlife, and parks, got the South Florida Research Center established. This was the first major research center in a national park, and it has accomplished a great deal of valuable work. Most of that work has been in Everglades, but the center also serves the other three South Florida NPS units. In the early 1990s, the center was renamed the South Florida Natural Resource Center. Following the 2000 approval of the Comprehensive Everglades Restoration Plan, it has received a considerable increase in funding.

Park Biologist Robertson played a key role in establishing the first comprehensive program of prescribed fire in any national park. Robertson's 1950s research uncovered the key role of fire in maintaining the vegetation of pine upland areas. Everglades received an exemption from NPS policy and began using fire as a management tool. The

park's first prescribed burn of pine uplands occurred in 1958. The park's program was critical in advancing a broader understanding of the role of fire in ecosystem management nationally. Prescribed burning in the park has since been expanded to include sawgrass marshes and other environments that are fire-dependent and quite possibly were previously managed with fire by native groups.

Protecting wildlife was a major motivation for creating the national park. In the early years, park staff focused on stopping hunting and trapping in the park. Alligator poaching remained a problem until Congress in 1969 banned alligator hides from interstate commerce. After the flood control features came on line in the 1960s, the changes to the water regime often had dire effects on the reproduction of wading birds, alligators, crocodiles, and other animals. The Endangered Species Act (ESA) of 1973 gave the Department of Interior new responsibilities and powers to protect endangered wildlife. Through the years, Everglades scientists have worked to inventory and monitor species and have served on several ESA recovery teams. Monitoring programs begun by Dr. Bill Robertson in the 1950s, notably covering bald eagles, have produced some of the longest continuous data sets on any U.S. species.

The subtropical climate of the Everglades and the changes wrought by water control make the region especially vulnerable to exotic plants and animals. By the 1960s, three plant species were of greatest concern: Australian pine (*Casuarina equisetifolia*), melaleuca (*Melaleuca quinquenervia*), and Brazilian pepper (*Schinus terebinthifolius*). *Schinus* is a particular problem on previously disturbed tracts, such as the former farm fields in the Hole-in-the-Donut. To promote a broad-based approach to non-native vegetation, park staff cofounded the Florida Exotic Pest Plant Council in 1984. In the early 2000s, the park took the lead in developing the South Florida and Caribbean Parks Exotic Plant Management Plan.

Exotic animals in the Everglades include large constrictor snakes, iguanas, and a number of exotic fish, many from the Cichlidae family. Beginning in the late 1990s, sightings of the Burmese python (*Python molurus*) in the park increased dramatically. The python is now known to be breeding in the park and may play a role in an observed reduction of small mammal populations. Realizing that prevention is key to preventing future invasions, the park has been a leader in efforts to educate the public on the dangers of releasing exotic animals into the environment.

The passage of the Wilderness Act in 1964 produced changes in the NPS's wilderness policies. Historically, the service had considered any areas not needed for administration or visitor services as de facto wilderness. The 1964 act required the NPS to more actively manage wilderness; specifically it was told to evaluate the wilderness potential of any roadless area of 5,000 acres or more. After public involvement and internal discussions,

the NPS proposed four Everglades wilderness areas, aggregating 1,296 million acres. Acknowledging the customary use of Florida Bay by motorboats, the park designated the seabed of the bay as wilderness while excluding the water column above it. Since 1997, the park's wilderness has been known as the Marjory Stoneman Douglas Wilderness, honoring the area's most prominent defender and author of 1947's *The Everglades: River of Grass*.

NPS and outside scientists often can reach research sites in park wilderness only by helicopters or airboats—vehicles that are typically banned from wilderness. NPS policy controls wilderness access in these special circumstances, and a park committee evaluates each proposed use. There has been some discussion in recent years over the appropriate application of wilderness policies at Everglades. Park staff also have to manage visitor use of wilderness areas. The park opened its first two backcountry (wilderness) campsites at Graveyard Creek and the Cane Patch in winter 1962/63. There are now forty-seven such campsites. A ninety-nine-mile Wilderness Waterway for canoeists and small motorboats was opened to the public in 1968 and is known to paddlers nationwide. The park adopted a backcountry management plan in 1981 to guide backcountry visitor use.

In the 1930s, NPS officials assured commercial fishermen that they would be allowed to continue to operate in the park. Monroe County interests would not have agreed to the park without this assurance. By the 1970s, fish catches in Florida Bay had noticeably declined and there was increasing tension between sportfishermen and commercial fishermen. Well-connected sportfishermen in the Florida Keys began a campaign to end commercial fishing and establish bag limits on sportfishermen. Although the scientific consensus was that factors other than commercial fishing—notably reduced freshwater flow into the bay—were mostly to blame for poor fishing, the NPS in 1979 decided to end commercial fishing in the park, effective December 31, 1985. Florida fishermen fought this in the courts and the Reagan administration tried to overturn the ban, but it went into effect as scheduled. The elimination of commercial fishing deprived some locals of their traditional livelihood, adding to the existing bitterness over the elimination of the Flamingo fishing community.

Several drought years in the middle 1960s seriously affected wildlife in the park and led to much national attention to the water problems in the Everglades. The NPS repeatedly came into conflict with the Corps of Engineers and the South Florida Flood Control District (later the South Florida Water Management District) over water supplies for the park. The U.S. Congress in 1970 mandated minimum water deliveries to the park, but this failed to address the basic problem that the flood control system delivered too much water to the western portion of the park and too little to the eastern. Also, the minimum delivery schedule did not closely mimic previous natural water deliveries.

In the late 1960s, Miami-Dade County began construction of a mammoth jetport in the Big Cypress Swamp six miles north of Everglades National Park. Conservationists vigorously opposed the project and brought it to a halt, leading to the 1974 creation of Big Cypress National Preserve as an NPS unit. A portion of the Big Cypress had been within the boundary originally proposed for Everglades National Park, but it was left out in the 1940s boundary compromise. The Jetport fight also brought Marjory Stoneman Douglas to the fore as the most prominent and respected defender of the Everglades.

The establishment of Big Cypress National Preserve improved the water situation on the western side of the park, but problems remained on the east. It became increasingly clear that an area of about 110,000 acres east of the park was critical for supplying water to the eastern Shark Slough and Taylor Slough. Park superintendents worked closely with state officials to build a consensus that the park needed to be expanded. Superintendent Mike Finley took advantage of president-elect George H. W. Bush's long-standing love of the fishing in Florida Bay to get his support for the bipartisan Everglades Protection and Expansion Act of 1989. The act brought vital wetlands under NPS control as well as Chekika State Park, which later became a day-use area within Everglades National Park.

Pollution of South Florida's waters by fertilizers containing phosphorous, nitrogen, and wastes from grazing animals emerged as a major problem in the 1970s and 1980s. Everglades marshes historically were a nutrient-poor environment, and even small amounts of nutrients can dramatically increase the growth of cattails and other invasive plants. NPS scientists understood that the state of Florida was not enforcing its own water quality standards. In 1988, Park Superintendent Michael Finley worked in secret with acting U.S. Attorney Dexter Lehtinen to file a water quality lawsuit against the state, with the NPS and the U.S. Fish & Wildlife Service as plaintiffs. The lawsuit was a bombshell and showed that the NPS was serious about protecting the park. Many believe this legal action laid the foundation for congressional approval of the Comprehensive Everglades Restoration Plan in 2000.

Through the years, the park has had intimate and sometimes thorny relationships with the U.S. military. Homestead Air Force Base lies just east of the park, and the Key West Naval Air Station is not far away. Park superintendents have had to remain vigilant in keeping overflights by jet aircraft from damaging natural values and lessening the enjoyment of visitors. Because of its subtropical environment and isolation, the park was repeatedly used in the 1950s and 1960s for surveillance stations and secret field tests of equipment by the military and its contractors. Following the Cuban Missile Crisis in autumn 1962, the U.S. Army insisted that a Nike surface-to-air missile battery be placed inside the park boundary on land that was on the verge of coming to the NPS from another government agency. The base operated from 1965 to 1979, after which it was turned over to the park. The park's Daniel Beard Center now occupies the base's

headquarters building, and the site is listed on the National Register of Historic Places. Interpretive tours of the base have proven very popular with visitors.

For many decades, a focus on the natural glories of the Everglades obscured the thousands of years of human history as well as the role of humans in shaping the landscape. Almost every area of high ground in the Everglades that has been archeologically tested has shown evidence of use by native people. Artifacts deeply buried on Everglades tree islands suggest that native people played a role in their creation by deliberately or inadvertently laying down soil and refuse. Prehistoric people also dug canals through the marshes for more convenient travel. Logic and archeological evidence from nearby areas strongly indicate that natives routinely managed the landscape with fire.

The NPS attitude to the human history of the Everglades has fluctuated. The service conceived of Everglades as a wilderness park and believed that all evidence of prior human occupation, aside from prehistoric archeological deposits, needed to be removed from the landscape. Residents of the fishing community at Flamingo were bought out and every trace of their community obliterated. Royal Palm Lodge, built by the Florida Federation of Women's Clubs, was cut in two and moved from the park. For many decades, the NPS sporadically mentioned Flamingo fishermen in exhibits and printed pieces but ignored other historic activities like farming, 1920s real estate schemes, burning wood for charcoal, and moonshine distilling.

NPS interpretation consistently made some mention of the Calusa and Tequesta, the native groups that were present in South Florida when the Spanish arrived in the 1500s. These groups were linguistically and culturally linked to the Seminole and Miccosukee people who began arriving from farther north in the eighteenth century. The NPS at times portrayed the Seminole and Miccosukee as latecomers to South Florida, almost as if to justify their removal from the park. The U.S. government recognized the Miccosukee Tribe of Indians of Florida in 1962. Tribal members had been living in camps along the Tamiami Trail since the late 1920s. Some camps were within the park boundary but had no formal status until a special use permit (SUP) was granted in 1962. A second forty-year permit was granted in 1973. As the tribe grew wealthy from gaming operations, it sought in the 1990s to build additional houses. Disputes arose over whether the tribe's construction activity followed the provisions of the SUP. Relationships between the park and the tribe soured over the housing issue and Miccosukee dissatisfaction with the flooding of tribal land in Water Conservation Area 3. In response, Congress passed the Miccosukee Reserved Area Act in 1998. The act doubled the size of the reserved area to 666 acres and granted the tribe sovereignty over the strip, although it remained part of the park.

The park established a formal cultural resources program in 2006. This has led to greater attention to archeological sites, ethnographic resources, and historic structures in the park. The cultural resource division assumed responsibility for the park's museum collections, which had suffered decades of underfunding and neglect. Poor preservation practices and lack of accountability have undoubtedly resulted in the loss of artifacts, specimens, and archival material. The Everglades Regional Collection Center was created in 1987 to curate and manage the collections of Everglades, Fort Jefferson National Monument, Biscayne National Park, and Big Cypress National Preserve. DeSoto National Memorial later joined the center. With a trained curator in charge, the center in 2003 was renamed the South Florida Collections Management Center. In the following decade, the center made significant strides in adopting professional standards and making the collections available to staff and outside researchers.

The park's interpretive and educational programs have grown from talks given by a handful of ranger-naturalists in the early 1950s to an extensive program involving permanent staff, seasonals, and volunteers. The park began an environmental education program in 1971 that brings area students and their teachers into the park for day trips and overnight stays. The program has evolved into the most comprehensive such effort within the NPS. In the late 1970s, the park established the Loop Road Environmental Education Center, located in Big Cypress National Preserve but run by Everglades interpretive staff. In 1981, the park opened another Environmental Education Center at Hidden Lake. The environmental education program has been a critical tool in fostering environmental awareness and support for the park's mission in the region. The park began an Artists in Residence in the Everglades (AIRIE) program in 2001. The program brings visual artists and writers into the park to work; often they contribute a work of art to the park or conduct a visitor program. Most importantly, they become informal ambassadors for the park when their residency ends.

Everglades National Park has achieved several forms of international recognition. The United Nations Educational, Scientific and Cultural Organization (UNESCO) made the park an international biosphere reserve in 1976 and a world heritage site in 1979. In 1987, the park became a wetland of international importance under the Ramsar Convention. The park has a long-standing relationship with the Bahamas National Trust, with the Everglades superintendent serving on the trust's board. Everglades is a partner park to Brazil's Pantanal National Park (Parque Nacional do Pantanal Matogrossense). Both are huge wetland parks and profit from an exchange of expertise.

The park's issues with the quantity, timing, location, and quality of surface water deliveries remained unresolved in the early 1990s. Congress in 1992 authorized the Corps to undertake a restudy of the Central & Southern Florida Project, one focused specifically on enhancing ecosystem values. The Clinton/Gore administration made the Everglades its

top environmental priority and put the restudy on a fast track. Throughout the 1990s, park staff provided input to the restudy and forcefully pushed to have it meet the needs of the park. The restudy resulted in the Comprehensive Everglades Restoration Plan (CERP), which was enacted into law December 11, 2000, as part of the Water Resources Development Act of 2000. The CERP, an extremely ambitious and complex plan that involves untested technologies, was first estimated to cost \$7.8 billion. The plan has met with considerable delays and the current cost estimate is around \$14 billion.

The raising of a one-mile section of the Tamiami Trail on to a bridge to allow more surface water flow into the park and the western portion of the C-111 project are the most notable completed restoration projects of benefit to the park. Realizing that the first CERP projects involved peripheral areas, the Corps in 2011 began the Central Everglades Planning Project (CEPP) under its CERP authorities. Under the CEPP, it is hoped that some long-discussed projects, notably removing levees and canals, that will benefit the core of the Everglades can be put on a fast track. The success or failure of the CEPP and the broader CERP will have a huge influence over the future of Everglades National Park.

Lying on the doorstep of two large and growing metropolitan areas, Everglades National Park is truly a wilderness on the edge. Managers there will always face challenges unknown to their colleagues in more remote areas. In spite of a dizzying array of issues, the park remains a stunning natural environment, in recent years attracting a million visitors annually, while simultaneously providing an ecosystem restoration test case for the world.

Abbreviations and Acronyms Used in Footnotes

AAAS	American Association for the Advancement of Science
AG	Attorney General
BIA	Bureau of Indian Affairs
CEPP	Central Everglades Planning Project
CERP	Comprehensive Everglades Restoration Plan
CF	Central Files, Everglades National Park
Corps	U.S. Army Corps of Engineers
CP	Ernest F. Coe papers
CR	Cultural Resources Division, Everglades National Park
C&SF	Central and Southern Florida
Dir.	Director. Unless otherwise indicated, all references are to the director of the National Park Service.
DCS	National Park Service Denver Service Center
DNR	Department of Natural Resources
DOA	Department of the Army
DOI	Department of the Interior
DOJ	Department of Justice
EC	Everglades Coalition
EDD	Everglades Drainage District
EFR	Everglades National Park Fire Records
ENHA	Everglades Natural History Association
ENP	Everglades National Park
ENPA	Everglades National Park Association
ENPC	Everglades National Park Commission
FCD	Flood Control District
FFWCC	Florida Fish and Wildlife Conservation Commission
FNPMA	Florida National Parks and Monuments Association
FWS	U.S. Fish & Wildlife Service
GMP	General Management Plan
GPO	Government Printing Office
HFC	National Park Service Harpers Ferry Center
IIF	Internal Improvement Fund of Florida
IPM	Integrated Pest Management
IWL	Izaak Walton League of America
LA	Landscape Architect
MMJ	May Mann Jennings
NA Ph	National Archives at Philadelphia
NARA II	National Archives at College Park, Maryland
NAS	National Audubon Society

NASc	National Academy of Science
NOAA	National Oceanic and Atmospheric Administration
NPA	National Parks Association
NPCA	National Parks Conservation Association
NPS	National Park Service
NWR	National Wildlife Refuge
PAC	Public Affairs Collection
O-SOI	Office of the Secretary of the Interior
R&VP	Resource and Visitor Protection
R-CASA	Records of the Superintendent's Office, Castillo de San Marcos National Monument
RD	Regional Director
RDR1	Regional Director, Region One
RDSE	Regional Director, Southeast Region
SAR	Superintendent's Annual Report, Everglades National Park
SEAC	Southeast Archeological Center of National Park Service
SFCMC	South Florida Collections Management Center
SFNRC	South Florida Natural Resource Center
SFRC	South Florida Research Center
SFWMD	South Florida Water Management District
SLH	Spessard L. Holland
SMR	Superintendent's Monthly Report, Everglades National Park
SOI	Secretary of the Interior
SOA	Secretary of the Army
Supt.	Superintendent
TWS	The Wilderness Society
UF	University of Florida
USAF	U.S. Air Force
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
WASO	Washington Office, National Park Service
WCA	Water Conservation Area
WNRC	Washington National Records Center, Suitland, Maryland



**Wilderness on the Edge:
A History of Everglades National Park**

*Chapter 1:
The Everglades to the 1920s*

Chapter 1: The Everglades to the 1920s

Introduction

The Everglades is a vast wetland, forty to fifty miles wide and one hundred miles long. Prior to the twentieth century, the Everglades occupied most of the Florida peninsula south of Lake Okeechobee.¹ Originally about 4,000 square miles in extent, the Everglades included extensive sawgrass marshes dotted with tree islands, wet prairies, sloughs, ponds, rivers, and creeks. Since the 1880s, the Everglades has been drained by canals, compartmentalized behind levees, and partially transformed by agricultural and urban development. Although water depths and flows have been dramatically altered and its spatial extent reduced, the Everglades today remains the only subtropical ecosystem in the United States and one of the most extensive wetland systems in the world. Everglades National Park embraces about one-fourth of the original Everglades plus some ecologically distinct adjacent areas. These adjacent areas include slightly elevated uplands, coastal mangrove forests, and bays, notably Florida Bay. Everglades National Park has been recognized as a World Heritage Site, an International Biosphere Reserve, and a Wetland of International Importance. In this work, the term Everglades or Everglades Basin will be reserved for the wetland ecosystem (past and present) running between the slightly higher ground to the east and west. The term South Florida will be used for the broader area running from the Kissimmee River Valley to the toe of the peninsula.²

Early in the twentieth century, a magazine article noted of the Everglades that “the region is not exactly land, and it is not exactly water.”³ The presence of water covering the land to varying depths through all or a major portion of the year is the defining feature of the Everglades. The water comes from rainfall and from surface flow. The surface flow, or sheet flow, originates to the north in the headwaters of the Kissimmee River and drains into Lake Okeechobee. From the lake, water moves over a landscape (now largely compartmentalized) with a nearly imperceptible slope to the south and southwest (figure 8–1, The Central & Southern Florida Flood Control Plan). Rainfall in the area is not evenly spread during the year but comes mostly between May and October. Sometimes, during hurricanes, a foot of rain can come in a day. Rainfall can also vary substantially

¹ Much ink has been spilled on the question of whether Everglades is a singular or plural noun. Marjory Stoneman Douglas famously opted for the plural. “There are no other Everglades in the world,” is the opening of her epic 1947 work *The Everglades: River of Grass*. Although Douglas more than anyone else drew the public’s attention to the region, her plural construction did not catch on. Like other writers today, I will use the singular.

² Lance H. Gunderson and William F. Loftus, “The Everglades,” in *Biodiversity of the Southeastern United States*, vol. 1, *Lowland Terrestrial Communities*, ed. William H. Martin, Stephen G. Boyce, and Arthur C. Esternacht (New York: John Wiley & Sons, 1993), 199–200.

³ E. A. Dix and J. N. MacGonigle, “The Everglades of Florida: A Region of Mystery,” *Century Magazine*, Feb. 1905, 513.

from year to year. The watery world of the Everglades lies at the southern extremity of North America's temperate zone, but it is close to tropical islands, notably Cuba and the Bahamas. Most Everglades plants and animals are typical of the temperate zone to the north, but a significant minority are from the Caribbean tropics to the south. All of these species have adapted to the region's unique environmental characteristics. Observers have consistently been awed by the vast numbers of wading birds—heron, egrets, ibis, and wood storks among them—that nest and feed in the Everglades. Among the other species found in the Everglades are the royal palm, the Caribbean mahogany, multicolored tree snails, the Florida panther, the Cape Sable seaside sparrow, and the ethereal ghost orchid. Nearby mangrove forests, keys, and bays are home to species that include the American crocodile, the manatee, and aquatic species, such as crabs, tarpon, pink shrimp, and mullet, which are important to sports and commercial fishermen.⁴

People have been present in the Everglades and adjacent areas since before the ecosystem began to take shape five to six thousand years ago. They adapted to the watery surroundings and, as described further in Chapter 17, helped to shape the landscape by digging canals and laying down refuse heaps that formed shell islands and perhaps interior tree islands as well. Native people made intensive use of areas of slightly higher elevation and traveled extensively by boat through most of the Everglades and coastal waters, sometimes cutting passages to ease their way. Much like nonhuman predators, humans adopted seasonal hunting and fishing practices based on fluctuating water levels and their effects on food sources. Permanent European American and African American settlers arrived in the Everglades only around the middle of the nineteenth century. Later in the century, these inhabitants and Seminole Indians introduced naturalists and sportsmen to the Everglades. Having access to national media outlets, these outsiders made the Everglades more widely known, variously describing it as hauntingly beautiful and ominously forbidding. The urge to preserve a portion of the Everglades as untouched and the urge to convert its wetlands into productive agricultural lands arose almost simultaneously around 1900. The tensions and trade-offs inherent in these two urges underlie the story that unfolds in the following pages.

The term Everglades itself is evocative and potentially misleading. One definition of glade is “a grassy open space.” Much of Florida south of Lake Okeechobee was once covered with sawgrass marsh, often stretching as far as the eye could see. Botanists classify sawgrass as a sedge, but its resemblance to prairie grasses led to its common name, sawgrass. Thus, the term Everglades was an attempt by nineteenth-century white explorers to describe sawgrass glades that seemed endless. Charles Vignoles, the city of St. Augustine's surveyor, was the earliest writer known to have used the term. His 1823 book, *Observations Upon the Floridas*, first describes the area as the *Great Glade*. Later

⁴ Gunderson and Loftus, 199–201.

he uses the term *Ever Glade* (italics in original). At one point, the term Never Glade appears; this is likely a misprint. A map engraved by Henry S. Tanner and issued in conjunction with Vignoles’s book identified the area as the “EVER GLADES” (figure 1–1).⁵ Closed up as one word, Everglades is the term for the area that has stuck. The Seminole Indians too were struck by the immense sawgrass stands, which they probably first visited in the eighteenth century. They called the area Pa-Hay-O-Kee, which is translated as “grassy water.” Although the term Everglades might suggest an environment that has been ever present, on a geological scale the Everglades is quite young; its formation began only some five to six thousand years ago.

This chapter includes a brief description of the forces that created the Everglades and a sketch of the Everglades ecosystem before engineers began to drain it to facilitate agriculture and settlement. It then moves on to a consideration of the human occupation of the Everglades and adjacent areas up to the 1920s, when a major organized campaign for a national park in the Everglades got underway.



Figure 1–1

⁵ Charles Vignoles, *Observations Upon the Floridas* (New York: E. Bliss & E. White, 1823), 49–53; Junius E. Dovell, “A History of the Everglades of Florida” (PhD diss., University of North Carolina, 1947), 57.

The Everglades before Mechanized Drainage

An understanding of the predrainage Everglades begins with the area's geology. The basement rock (the topmost unstratified rock underlying the area's limestone) in South Florida is granite and other igneous rock. When the supercontinent of Pangaea broke up about 200 million years ago, Florida's basement rock was detached from Gondwana (present-day West Africa) and became part of North America. This bottom stratum has an almost imperceptible west/southwest slant of roughly two to three inches per mile. Once attached to North America, the land mass that would become Florida, known as the Florida Platform (or Florida Plateau), lay beneath a shallow sea for tens of millions of years. In this period, thousands of feet of limestone were laid down on top of the basement rock as countless generations of sea creatures died and fell to the ocean floor. Because the basement rock was sinking at roughly the same rate that limestone was forming, the relationship of the sea floor to the sea surface remained relatively constant.⁶

Only during the glacial periods of the last 2.5 million years did portions of the Florida Platform emerge above the surface of the sea. Throughout this period, glacial and interglacial periods alternated, with sea levels falling when glaciers expanded, and rising when they began to melt. During interglacial periods, when much of the Florida Platform was again submerged, additional layers of limestone formed. These layers, nowhere more than 100 feet thick, are not uniform across the Everglades. All are quite porous, but minor variations in porosity influence what can grow above them. When glacier formation caused sea levels to fall, the newly formed rock was exposed and became subject to erosion, mainly from wind. Throughout this time, forces of geological uplift were absent in Florida so the exposed bedrock remained flat and erosion was limited.⁷

Although there probably were other times during the last 2 million years when wetlands were present in South Florida, the Everglades ecosystem as we know it began to form only about five to six thousand years ago. The most recent glaciation, the Wisconsin, occurred from 67,000 to 10,000 years before present (YBP). At the peak of this glaciation, sea level was 300 feet or more below its present level, and the land mass of the Florida peninsula was roughly twice what it is today. Analysis of prehistoric plant remains indicates that the exposed portions of the Florida Platform then were mostly dry and windswept, characterized by shifting sand dunes and later scrub forest or savanna communities. As the Wisconsin Age glaciers began melting roughly 18,000 YBP, the sea level rose quickly at first, then more gradually. By five to six thousand years ago, the sea

⁶ Patrick J. Gleason and Peter Stone, "Age, Origin, and Landscape Evolution of the Everglades Peatland," in *Everglades: The Ecosystem and its Restoration*, ed. Steven M. Davis and John C. Ogden (Delray Beach, FL: St. Lucie Press, 1994), 156–57.

⁷ David McCally, *The Everglades: An Environmental History* (Gainesville: University Press of Florida, 1999), 5–6.

was approaching its present level. Slightly higher limestone formations to the east (the Atlantic Coastal Ridge) and to the west in the Big Cypress Swamp created the Everglades Basin, an extremely shallow trough running through the last 100 miles of South Florida. As the sea level rose, the water table also rose, and portions of this basin became inundated during part of the year.⁸

Climatic changes that marked the waning of the Wisconsin Ice Age also played a role in the creation of the Everglades ecosystem. The rising water table and warmer oceans increased the amount of rainfall. The current pattern of a rainy season from May to October and a drier winter from November to April became established. In some places, cracks in the limestone bedrock allowed springs to bubble up from the underlying aquifer. Scientists would later determine that the groundwater and surface water regimes in the Everglades are essentially one. The wetter conditions and seasonal freshwater flooding gradually produced a change in the plant and animal communities that South Florida could support. The period during one year that an area is flooded is known as its hydroperiod. Differences in hydroperiod in the Everglades are largely a function of tiny differences in elevation and differences in the ability of underlying soils and rock to retain water. As hydroperiods began to lengthen about 5,000 YBP, plant communities tolerant of freshwater flooding became more and more common in the Everglades Basin. Areas that remained flooded year-round were dominated by water lilies, while somewhat shorter hydroperiods produced stands of sawgrass. As vegetation decayed over the centuries, layers of peat and muck were laid down over the limestone bedrock.⁹ The particular nature of the layer in any locality depended on the type of vegetation and the proportion of inorganic material that was mixed in. Layers of ash found in Everglades soils demonstrate that fires caused by lightning and set deliberately by native peoples were a common occurrence. Fire was an important factor in maintaining or discouraging plant species. Nearly all of the Everglades soils were low in nutrients, such as phosphorous, potassium, copper, and manganese, which had important consequences for the type of plant communities that could be supported.¹⁰

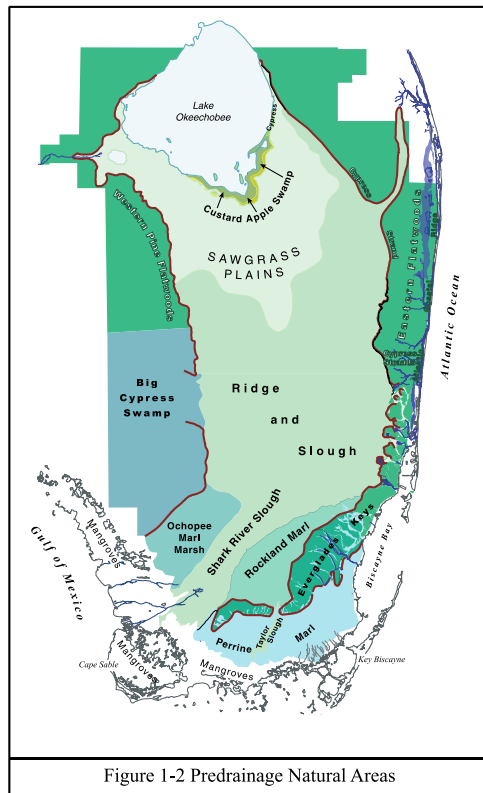
The following is a sketch of the characteristics of the Everglades before the era of water control that began in the 1880s. A major collaborative effort, *Landscapes and Hydrology of the Predrainage Everglades*, published in 2011, has added significantly to the

⁸ McCally, 5–8.

⁹ Scientists define muck as an organic soil that is more highly decomposed than peat. Popular writing on the Everglades tends to use the terms as synonyms.

¹⁰ McCally, 9–18; Gleason and Stone, 161–67. A. B. Bottcher and F. T. Izuno, eds., *Everglades Agricultural Area (EAA): Water, Soil, Crop, and Environmental Management* (Gainesville: University Press of Florida, 1994), 37. Environments low in nutrients are called oligotrophic.

understanding of the historic Everglades ecosystem.¹¹ In this work, Christopher McVoy and his co-authors present the most accurate snapshot of the Everglades ecosystem, ca. 1850, yet achieved. As previously noted, the Everglades was (and remains) part of a larger ecosystem that included the Kissimmee River Basin and Lake Okeechobee (figure 1–2, predrainage plant communities). The Kissimmee River began in a collection of lakes south of present-day Orlando. It then meandered through a 100-mile-long, 4,500-square-mile watershed marked by wet prairies, before flowing into Lake Okeechobee. The lake began forming at roughly the same period that the Everglades did (5,000 to 6,000 YBP), as silts and peat were deposited on the lake’s southern shore. At between 650 and 730 square miles, Lake Okeechobee was the second largest lake wholly within the lower 48 states. It was shallow, with a maximum depth of twenty feet, and teemed with black bass, catfish, turtles, and bullfrogs. The deposition of peat and silt along the lake’s southern shore created a natural dam, but the shore was not elevated above the lake level. Only after the level of the lake was artificially lowered did observers note an elevated rim.¹²



¹¹ Christopher V. McVoy, Winifred Park Said, Jayantha Obeysekera, Joel A. VanArman, and Thomas W. Dreschel, *Landscapes and Hydrology of the Predrainage Everglades* (Gainesville: University Press of Florida, 2011). Based on more than 900 primary sources, many of which are reproduced in whole or in part as appendices, this work contains painstaking reconstructions of the predrainage environments of the Everglades and the wooded uplands to the east.

¹² McVoy et al., 258–59; McCally, 62; Alfred J. Hanna and Kathryn A. Hanna, *Lake Okeechobee: Wellspring of the Everglades* (Indianapolis: Bobbs-Merrill Co., 1948), 18.

The Everglades historically received the bulk of its water directly from rainfall, but water that flowed out from Lake Okeechobee into the Everglades Basin was critically important in maintaining hydroperiods.¹³ The surface flow from the lake fluctuated seasonally. In all but the driest years, water flowed from the lake most of the year. South of the lake was a 660,000-acre expanse, averaging twenty miles north to south, that McVoy et al. describe as sawgrass plains. Inundated through most of the year, this area was dominated by sawgrass (*Cladium jamaicense*) to the virtual exclusion of other flora. It was this portion of the Everglades that early white explorers typically described as impenetrable; it was avoided even by the Seminoles. Along the southwestern shore of Lake Okeechobee, the sheet flow entered directly into the sawgrass marsh (figure 1–3, sawgrass marsh). On the southeast for a distance of about thirty miles, the sheet flow traversed a narrow band of custard apple swamp before entering the sawgrass plains.¹⁴ The dense custard apple swamp was home to large populations of alligators and birds. Below the tree canopy were gourd vines, moon vines, giant ferns, and epiphytes that created a jungle-like appearance. Eight or ten short rivers ran from the lake shore through the custard apple swamp before disappearing into the sawgrass marsh.¹⁵



Figure 1–3, Sawgrass Marsh 15

Because the Everglades Basin was virtually flat, the surface water flowing into the sawgrass plains did not coalesce into distinct streams but spread out in a thin, even layer forty miles wide. The very meager slope and the resistance provided by the sawgrass

¹³ Before drainage, the Everglades Basin also received some water as sheetflow from the Big Cypress Swamp on the west and from groundwater. It has not been possible to estimate the quantities, but these sources were clearly less important than rainfall and overflow from Lake Okeechobee. See McVoy et al., 258–61.

¹⁴ The term “custard apple” today is applied to a cultivated plant, *Annona reticulata*. The plant formerly called custard apple (*Annona glabra*) is now commonly known as “pond apple.” McVoy, et al., 169.

¹⁵ McVoy, et al., 166–70, 258–60; McCally, 62–64.

stands kept the water surface roughly parallel to the subsurface soil; i.e., water depth was virtually the same from north to south at any given time. West of Lake Okeechobee, the Caloosahatchee River rose out of the marsh and flowed to the Gulf of Mexico past the future site of Fort Myers. To the east, the St. Lucie River arose, flowing into the Atlantic past present-day Stuart. Neither river connected directly to Lake Okeechobee.¹⁶

South of the sawgrass plains, a more varied landscape, called by McVoy et al. the ridge and slough landscape, made up roughly 55 percent of the historic Everglades, encompassing some 1.5 million acres. Minute differences in elevation created “ridges” dominated by sawgrass, interspersed with sloughs, often called “leads” or “channels” by early explorers. The ridges and sloughs ran parallel to the primarily north-to-south flow of water. In a typical year, water would recede from the ridges in the dry winter season, but some depth of water would remain in the sloughs. The seasonal variations in water level alternately concentrated and dispersed small marine animals, with important consequences for predators. Some ponds that held water in the dry season were created by alligators with their tails and are known as alligator holes. The sloughs supported floating vegetation, primarily the white water lily.¹⁷

Thousands of slightly elevated tree islands, sometimes called hammocks, dotted the ridge and slough landscape. This alternation of sloughs, ridges, and tree islands has led scientists to call this region a mosaic or a patterned peatland. Ranging in size from a few feet across to several hundred acres, the tree islands can be classified into two major types. Strand tree islands were teardrop- or lens-shaped when viewed from above, often with a slightly higher “head” at the upstream side. Strand islands also aligned with the water flow. The second type of tree island was the bayhead, a smaller round- or oval-shaped island. Historical accounts indicate that strand islands supported mostly shrub vegetation—wax myrtle, coco plum, and dahoon holly—and the occasional cabbage palm (figure 1–4, hammock vegetation). As the name suggests, bayheads seem to have been dominated by shrubby trees commonly known as bays or myrtles. Tree islands provided important nesting sites for terrestrial and semi-aquatic animals. They also were extensively used by native populations, who quite possibly had a role in their creation. Some, but by no means all, tree islands are associated with anomalies in the underlying bedrock, but the mechanisms of their formation are poorly understood. The presence of middens and other evidence of human occupation of tree islands dating to 5,000 or more YBP suggest a possibility of human agency in their formation, as discussed below.¹⁸

¹⁶ McVoy, et al., 169–73; McCally, 9–18.

¹⁷ McVoy et al., 118, 188–89.

¹⁸ McVoy, et al., xx, 175–79, 189–91; Gunderson and Loftus, 221–22. See Chapter 17 for a discussion of the scientific evidence supporting the possibility that tree islands formed atop aboriginal middens.

From the ridge and slough region, water flowed out of the Everglades to the sea via two main pathways: 1) the Shark River Slough and the coastal mangrove belt and 2) gaps in the Atlantic Coastal Ridge. Marshes of shallower soil depth flanked the lower course of the Shark River Slough. It is believed that before drainage, the vegetation of these marshes was quite similar to that of the slough although the marsh areas were probably less variegated. Portions of these marshes likely were dry during part of the year.¹⁹ Short coastal rivers, such as the Harney and Shark, carried water through the mangrove belt into the Gulf of Mexico. Other rivers or creeks led from Shark River Slough into Whitewater Bay. Except in very dry periods, the ridge and slough region remained hydrologically connected to the Big Cypress Swamp to the west.²⁰



Figure 1-4, Hammock Vegetation

The presence of the Atlantic Coastal Ridge directed much of the Everglades sheet flow to the south and southwest, but historically as much as 40 percent of Everglades outflow exited through gaps in the ridge to the Atlantic Ocean. In some of these gaps, waters coalesced into short, year-round rivers, including the Hillsboro, New, Little, and Miami. A large number of the channels through the ridge, known historically as coves,

¹⁹ These areas are today known as marl marshes or marl prairies; McVoy et al. believe that the marshes historically had accumulations of peat that later burned off when drainage exposed them.

²⁰ McVoy, et al., 175-76, 261.

indentations, or prairies, carried water out of the Everglades during wetter periods of the year. Later, these also became known as transverse glades or finger glades. Before drainage, many of the transverse glades supported sawgrass stands. Southwest of present-day Miami, wider gaps were present in the coastal ridge. These areas of higher ground surrounded by marsh became known as the Everglades Keys. Long Pine Key in Everglades National Park is the southernmost of these keys. In the past, the higher elevations of the Atlantic Coastal Ridge and a sand ledge that sloped west from it contained forests. Often referred to today as pine flatwoods or pine uplands, these more elevated areas supported a mosaic of plants before drainage. Pines, primarily slash pine, were present but so were hardwoods, saw palmettos, cabbage palms, and grasses (figure 1–5, pine upland). The uplands also were pockmarked with thousands of ponds that supported aquatic vegetation. Historically, these higher areas provided major habitat to birds, such as wild turkeys, as well as deer, panthers, bears, and other mammals.²¹



Figure 1–5, pine upland

Dense forests of red, white, and black mangrove characterized the coastline of South Florida. The mangrove belt was thinner along the southeast coast but up to several miles deep along the Gulf Coast (figure 1–6, mangroves on the Gulf coast). Red mangrove is the most salt-tolerant of the three varieties, and its prop-root system provided shelter to the young of innumerable marine species. Understory in the mangrove forests included orchids, bromeliads, and tree cacti. Each winter, large colonies of wading birds—herons, ibis, and wood storks—established rookies in the mangrove forests. A number of lakes and bays marked the area inland from Cape Sable; the cape itself had an expanse of sand beach and slightly elevated prairies behind it. A large assemblage of mangrove islands, later called the Ten Thousand Islands, stretched along the Gulf Coast from near the outlet of Lostmans River to present-day Naples.²²

²¹ McVoy, et al., 224–28, 273–75; McCally, 69–76.

²² McCally, 76–80.



Figure 1-6, mangroves on the Gulf coast

At the toe of the peninsula, beyond the margin of the mangrove forests, lay Florida Bay, a shallow, roughly triangular body of water lying between the mainland and the arch of keys that stretched southwest from Biscayne Bay some 150 miles to Key West. Florida Bay and the smaller bays and estuaries opening onto it were home to vast populations of fish, shrimp, lobsters, and crabs, which in turn attracted predator bird populations. Florida Bay was near the northern limit of the range of the American crocodile, which nested along its shores and on keys. The West Indian manatee and several species of sea turtle also frequented Florida Bay, grazing on the sea grasses that covered its bottom.

These were the general characteristics of the Everglades before drainage. As previously noted, humans were already present in the Everglades as the landscape was forming and had a role in its creation.

Native Peoples

Native Americans arrived in the Florida peninsula at least 12,000 years ago. Because sea level then was substantially lower than it is today, South Florida was largely arid but was capable of supporting nomadic human populations that ranged over wide areas in search of game. Large animals, such as mastodons, mammoths, sloths, dire wolves, saber-toothed cats, camels, and land tortoises still roamed the North American continent. Archeologists believe that in this period, small groups of native people moved from place to place within a defined home range to take advantage of seasonal food sources. This early phase of native occupation, ending about 11,000 YBP, is called the Paleo-Indian period.²³

Changes in tools and weapons that began to appear around 11,000 YBP have led archeologists to identify this as the beginning of a new cultural tradition, the Archaic. The Archaic is subdivided into early (11,000 to 9,000 YBP), middle (9,000 to 6,000 YBP) and late (6,000 to 3,000 YBP) phases. An important early Archaic period site is the Cutler Fossil Site, located on the Deering Estate south of Miami on the Atlantic Coastal Ridge, near Biscayne Bay. Dated to about 10,000 YBP, this site contains the earliest evidence of human occupation of South Florida. Fossilized bones of mammoths, sloths, dire wolves, and saber-toothed cats have also been found at the site. Over the course of the Archaic, South Florida's inhabitants gradually adopted a more settled way of living although settlements likely remained small. For much of the Archaic, native people probably continued to be organized in small family groups with little formal social ranking. Early Archaic sites have not been found in the Everglades. Because sea level was several feet lower in early Archaic times, it is possible that sites from this period lie submerged just offshore.²⁴

As the Everglades ecosystem and Lake Okeechobee began taking shape five to six thousand years ago, food sources expanded dramatically and native populations began growing. The formation of marshes and coastal estuaries provided a rich source of fish, shellfish, reptiles, and amphibians. Coastal, riverside, and lakeside dwellers supplemented these food sources with the hunting of land animals and the gathering of fruits and edible roots. In some cases, the natives may have encouraged the growth of useful plants by transplanting them or clearing out undesirable growth. As early as five to six thousand ago (during the late Archaic), native groups along the Gulf Coast had established year-round coastal settlements where they practiced a fishing-hunting-gathering way of life. Horr's Island, a site in the Ten Thousand Islands just northwest of

²³ John W. Griffin, *Archaeology of the Everglades* (Gainesville: University Press of Florida, 2002), 144–45; McCally, 34.

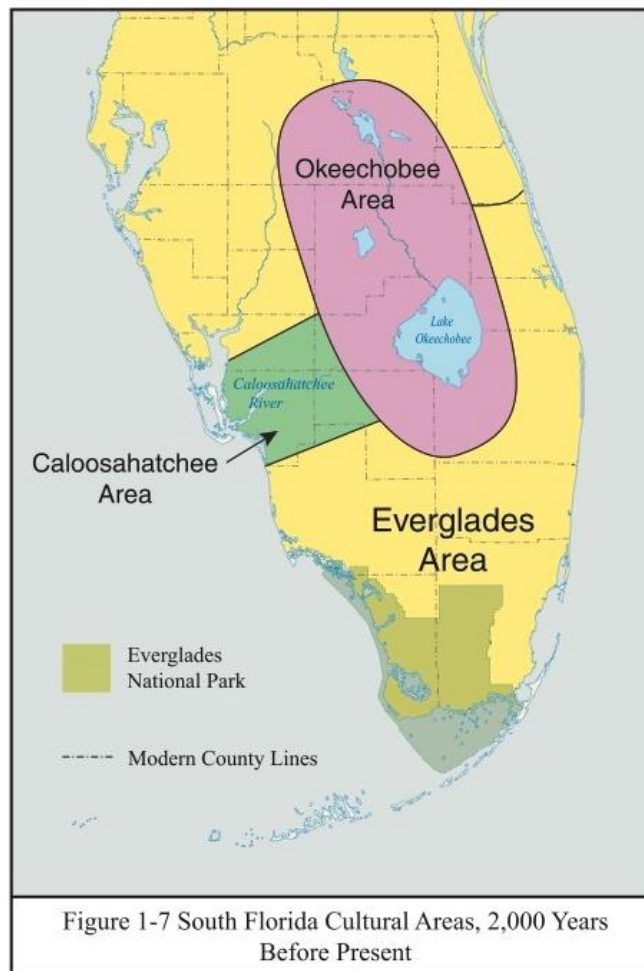
²⁴ Jerald T. Milanich, "Original Inhabitants," in *The New History of Florida*, ed. Michael Gannon (Gainesville: University Press of Florida, 1996), 3; Griffin, 282.

the park's boundary, has revealed evidence of a settled population without ceramics or field agriculture about 6,000 YBP. Areas surrounding Lake Okeechobee also were rich in food resources. A site known as Fort Center, northwest of the lake, was occupied as early as 3,000 YBP and sites within Everglades National Park have been dated to 5,600 YBP.²⁵

The first fired-clay pottery made in North America appeared in Florida about four thousand years ago. By about 2,500 YBP, pottery making was widespread enough in South Florida to enable archeologists to define cultural areas, largely based on differences in the decoration and paste characteristics of pottery remains. In South Florida, what is generally known as the Glades tradition begins around this time. Archeologists recognize three major geographical areas within the Glades tradition (figure 1–7, South Florida cultural areas). The area around Lake Okeechobee is known as the Okeechobee (or Belle Glade) area, the area to the west surrounding the lower reaches of the Caloosahatchee River is the Caloosahatchee area, and all of South Florida below these two areas is called the Everglades area. Some archeologists recognize two subdistricts within the Everglades area: a Ten Thousand Islands district and a Keys district. It should be kept in mind that there were many similarities in food sources, cultural practices, and material culture across these areas and districts.²⁶

²⁵ Griffin, 145–46, 328; Michael Russo, Ann S. Cordell, Lee Newsom, and Sylvia Scudder, *Final Report on Horr's Island: The Archaeology of Archaic and Glades Settlement and Subsistence Patterns* (Gainesville: Florida Museum of Natural History, 1991); Jerald T. Milanich, *Archaeology of Precolumbian Florida* (Gainesville: University Press of Florida, 1994).

²⁶ Milanich, *Archaeology*, 413–17; Griffin, 132–33, 148–49.



Among the common characteristics of the peoples of South Florida from roughly 2,000 to 1,500 YBP were 1) overwhelming reliance on fishing, hunting, and gathering for food, 2) use of wood, bone, and shell for tools, and 3) use of dugout canoes. South Florida provides few sources of stone that can take an edge so shells and the bones from land and marine animals were commonly used in toolmaking. There is also evidence that a number of the peoples of South Florida buried their dead in the peat or muck below shallow ponds. We have little direct evidence of Glades tradition housing. Assuming continuity into the contact period, housing was probably constructed of poles inserted into the earth, with palmetto and other fronds used for roofing and siding. In the Caloosahatchee area, social organization changed considerably in this period. A socially stratified chiefdom society arose to replace the previous less formal societal structures. The Spanish later gave the name Calusa to the people of the Caloosahatchee area. Although there is debate about when this people adopted a more complex social organization, it remains one of the few known chiefdom societies that was not based on field agriculture but rather on fishing, hunting, and gathering.²⁷

²⁷ Milanich, *Archaeology*, 321; Griffin, 283.

Archeological sites from the period of the Glades tradition are plentiful in and near Everglades National Park. Archeologist Jerald T. Milanich has observed that “at one time nearly every bit of higher land adjacent to coastal salt marshes and estuaries [in South Florida] had archaeological sites on it.” Modern development has destroyed almost all of these sites along the Atlantic Coast from Biscayne Bay north through Palm Beach County. Among the site types found in Everglades National Park are shell and earth middens, mounds that served as platforms for buildings, some with associated shell platforms, as well as purpose-built ramps and canals, all constructed by native people before AD 1500. Most of these sites are along the Gulf Coast, extending to Marco Island north of the park and to the Shark River Slough. Many tree islands within the park also bear signs of precontact native occupation. The archeological survey of the East Everglades addition uncovered the presence of a buried, mineralized layer on some tree islands. Artifacts found below this layer have been dated to 5,600 YBP. These findings show that humans were using the interior of the Everglades considerably earlier than previously thought and may well have played a role in the formation of tree islands. Few of the park’s archeological sites have benefitted from in-depth archeological study, but together they provide considerable insight into native ways of life prior to the arrival of Europeans early in the sixteenth century. A summary history of the archeological studies conducted within the park appears below in Chapter 17.²⁸

Our knowledge of the material culture of the people of the Glades tradition is limited by the fact that wood, leather, and fibers decay quickly in South Florida’s subtropical climate. These materials typically survive only when they have remained continuously submerged in peat or muck. One of Florida’s earliest archeologists, Frank Hamilton Cushing, in 1896 made some spectacular finds at the Key Marco site (on Marco Island), on the Gulf Coast between Naples and Everglades City. Among the many types of artifact preserved in the muck were bowls, pounding tools, throwing stick handles, and a miniature canoe, all made of wood. Also present were sections of fish net, some with floats and weights still attached. Most renowned among Cushing’s artifacts are a four-inch-high kneeling feline figure and a painted deer head. Sites and districts within Everglades National Park with substantial evidence of Glades period occupation include: Monroe Lake, Onion Key, Turner River, the Walter Hamilton Place, Rookery Mound, and Cane Patch, as well as two districts, Shark River and the Ten Thousand Islands. Archeologist John Griffin in the 1980s identified 193 Glades period sites within the boundary of Everglades National Park. Subsequent archeological work on tree islands in the East Everglades and logical inferences from the presence of a submerged site at the Anhinga Trail strongly suggest that many hundreds, if not thousands, of archeological sites remained undiscovered in the park.²⁹

²⁸ Milanich, *Archaeology*, quotation at 299; Griffin, 280–82; Margo Schwadron, *Archeological Damage Assessment of Sites Burned in the Mustang Corner Fire, Everglades National Park, Florida* (Tallahassee: SEAC, June 25, 2008).

²⁹ Milanich, *Archaeology*, 304–308; Griffin, 241–73; Margo Schwadron, personal communication, Aug. 23, 2013.

A site that reveals the engineering skills of the people of the Glades tradition is the Bear Lake site and the nearby Mud Lake Canal, within the park and not far from Flamingo. Analysis of the remains found in the mounds at Bear Lake indicates that the site was occupied throughout much if not all of the Glades period prior to contact. The four-mile-long canal connected Mud Lake with Florida Bay, providing natives with a sheltered canoe route from the Ten Thousand Islands region to Florida Bay. Archeologist John Goggin described the canal as from 6 to 9 meters wide and up to 6 meters deep. Mud Lake Canal was designated a National Historic Landmark in 2006. Remains of Native American-built canals are also present on Marco Island, on Pine Island near Cape Coral, and at the Ortona site in the upper Caloosahatchee basin. The Turner River site in the park has a row of seven shell ridges and two parallel rows of conical mounds. As early as the 1920s, anthropologist Aleš Hrdlička described this as “the most noteworthy group of shell heaps and mounds to be found in the entire region.” A number of sites in the Okeechobee area, north of the park, contain complex earthworks, “including mounds, ponds, borrows, ditches, canals, and linear and annular embankments, some in peculiar geometric shapes.”³⁰

The presence at South Florida archeological sites of artifacts made from copper and stone quarried in other regions indicates that the natives of this region participated in trading networks that brought them goods from other parts of North America. Gulf Coast shells have also been found at sites as far away as Minnesota and eastern Oklahoma. Clear evidence that maize was cultivated at the Fort Center site in the Okeechobee area as early as 2,400 YBP has led to much debate among archeologists. It appears that the maize was grown in limited quantities, possibly for ceremonial use. Maize cultivation seems to have ceased at Fort Center about 1,500 YBP and does not appear in North Florida sites until around 1,200 YBP.³¹

At the time of the first recorded visit of Europeans to South Florida shortly after 1500, the region may have been home to 20,000 or more inhabitants.³² They had developed societies based on intensive fishing, hunting, and the gathering of wetland and estuary food resources. They may have been agriculturists in the sense of transplanting and nurturing certain wild plants, but there is no evidence that they practiced field agriculture. These peoples had developed considerable skill in working local woods both for utilitarian and ceremonial objects. They had built mounds serving as platforms for buildings, some with associated shellwork plazas, burial mounds, ramps, and other earthworks and had excavated ditches and canals. In at least one area, in the lower Caloosahatchee River watershed, they had adopted a form of social organization centering on a hereditary chief and subordinate positions of prestige. With the

³⁰ Griffin, 10, 187–88, 239–40, 281, quotation at 254; Milanich, *Archaeology*, quotation at 279, 313; National Register of Historic Places, “Mud Lake Canal, Monroe County, FL, National Historic Landmark Nomination,” Sept. 20, 2006.

³¹ Milanich, *Archaeology*, 107–108, 287–291; Milanich, “Original Inhabitants,” in Gannon, ed., *The New History of Florida*, 12.

³² Preconquest native populations are notoriously difficult to estimate. See the extensive discussion in John H. Hann, *Indians of Central and South Florida, 1513–1763* (Gainesville: University Press of Florida, 2003), 54–60.

arrival of the Spanish in the early sixteenth century, the historian has historical accounts, albeit written from a wholly European perspective, to combine with the archeological record.

The Arrival of Europeans in South Florida

The first recorded European visitor to Florida was the Spaniard Juan Ponce de León in 1513. Native people forcibly resisted Ponce's landings, and on the Gulf Coast he encountered a native who understood Spanish, making it all but certain that unrecorded visits had already occurred. When the Spanish settled Hispaniola, Puerto Rico, and Cuba after 1492, their brutal labor practices and the diseases they brought caused native populations to rapidly collapse. Well before 1513, raiders no doubt visited Florida to capture and enslave natives to work on the islands. Because this was an illegal activity, no records of these voyages survive. Ponce de León himself had participated in the "pacification" of both Hispaniola and Puerto Rico. In 1512, the king of Spain granted Ponce de León an *asiento* (a permission or charter) to conquer new lands. Sailing from Puerto Rico in early March 1513, Ponce de León reached the Atlantic Coast of the Florida peninsula in early April. Because the shores were covered in wildflowers and it was the Easter season (*Pascua Florida*), he named the landmass, which he believed to be an island, *La Florida*.³³

Historians believe that Ponce de León's first Florida landfall was around Melbourne Beach. He encountered no natives there and sailed south along the coast. Two attempts at landing were contested by natives with clubs, arrows, and spears. After sailing past the string of Florida keys, which he named *Los Mártires* (the Martyrs), he sailed up the Gulf Coast. Ponce de León anchored his ships at a location believed to be in San Carlos Bay, near the mouth of the Caloosahatchee River, off Sanibel Island. This put him in the heart of the Caloosahatchee cultural area, among people that the Spanish would call the Calusa. The Calusa attacked the Spaniards twice, the second time with 40 canoes, and Ponce de León decided to end his exploration. On his route back to Puerto Rico, he entered Biscayne Bay and noted the presence of a village at the mouth of the Miami River that he called *Chequescha*. This was the seat of a native group that the Spaniards subsequently would refer to as Tequesta (sometimes spelled Tekesta). Ponce de León returned to the domain of the Calusa in 1521, having obtained royal permission to establish a colony. Evidence suggests that he returned to San Carlos Bay, where he again met with a chilly reception. His two hundred settlers were repeatedly attacked, and in one skirmish, Ponce de León received a thigh wound. He withdrew his party to Cuba, where his wound became infected and died in July 1521 at the age of 47.³⁴

³³ Samuel Eliot Morison, *The European Discovery of America: The Southern Voyages, A.D. 1492–1616* (New York: Oxford University Press, 1974), 502–507; Michael Gannon, "First European Encounters," in Gannon, ed., *The New History of Florida*, 16–17.

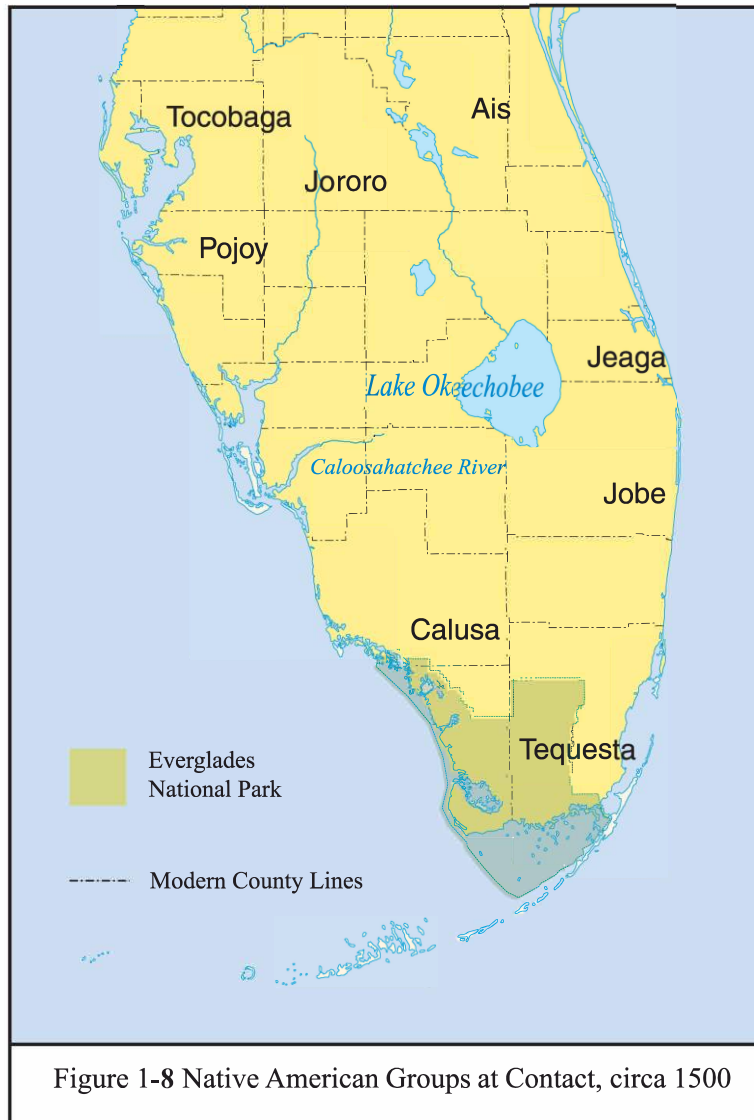
³⁴ Morison, 510–15; Hann, 153; Gannon, "First European Encounters" in Gannon, *The New History of Florida*, 18–21.

After Ponce de León's second voyage, Spain made no effort to garrison or settle South Florida until the 1560s. In the interim, Spanish captains are known to have stopped from time to time to take on wood and water, and slave raiders were surely also active. The two major Spanish attempts to explore *La Florida* (a name they soon were applying to all of eastern North America) started in the area of Tampa Bay and headed north, not south. The expedition of Pánfilo de Narváez began in 1528 and that of Hernando de Soto in 1539. These expeditions or forceful raids depended on native people for food. South Florida supplied neither the maize that the intruders and their horses needed for subsistence nor the precious metals they mainly sought. Nonetheless, De Soto's journey had devastating effects on chiefdom societies in North Florida and elsewhere in the Southeast; its effects on South Florida native groups are harder to assess. South Florida became more important to the Spanish after the middle of the century as her treasure ships continued to be wrecked off Florida's coasts. South Florida natives appropriated the salvaged cargoes and killed many survivors although they took in some as vassals.³⁵

Among the Indian groups identified by the Spanish in sixteenth-century South Florida were the Calusa, the Tequesta, and the Ais (figure 1–8, Native American Groups at Contact). As previously mentioned, the principal village of the Tequesta was at the mouth of the Miami River. Almost certainly, the principal town of the Calusa was on Mound Key, in Estero Bay just south of the mouth of the Caloosahatchee River. The homeland of the Ais was on the lagoon known as the Indian River and extended from St. Lucie Inlet north toward Cape Canaveral. Two smaller native groups, called the Jobe and Jeaga by the Spanish, occupied the coast south of the Ais and apparently were subordinate to them. Most of the permanent villages of all these groups were on the coasts. Archeological evidence indicates that camps and settlements occurred in the interior as well, notably on the tree islands of the Everglades. Native people routinely traversed the Everglades in canoes for hunting, fishing, and gathering. By the time that the Spanish returned to South Florida in 1564, the Calusa seem to have assumed a more dominant position among many of the other peoples. Spanish records indicate that the Calusa were able to exact from other tribes a share of the booty and captive sailors from shipwrecks. Relationships among the tribal groups, however, were fluid, marked by a shifting mixture of alliances, rivalries, and vassalage relationships.³⁶

³⁵ Gannon, "First European Encounters" in Gannon, *The New History of Florida*, 22–24, 33.

³⁶ Hann, 19.



A French settlement, known as Fort Caroline, planted on the banks of the St. Johns River in North Florida in 1564, suddenly made the whole peninsula of greater importance to the Spanish. King Philip II named Pedro Menéndez de Avilés governor of Florida and directed him both to eliminate the French and make the province more secure (figure 1–9, Menéndez de Avilés). Arriving off the Florida coast in late August 1565, Menéndez de Avilés wasted no time in founding the city of St. Augustine and killing almost all of the French settlers and soldiers. He then began to implement a plan for establishing Spanish garrisons at intervals along the Florida coast. These outposts would guard against encroachment by the French or English, help protect sea lanes, and begin the work of converting the natives to Christianity. The Spanish under Menéndez de Avilés established outposts at Calos, their name for the principal village of the Calusa on Mound Key, and at Tequesta. The natives were not interested in abandoning their traditions and beliefs, and

Spanish soldiers provoked hostility by killing two chiefs and some headmen at Calos. By early 1571, the Spanish had withdrawn from South Florida. For the next century, the Spanish crown concentrated its efforts in North Florida, where it established a string of missions, largely leaving the people of South Florida alone.³⁷

The Spanish would not again attempt a mission to the Indians of South Florida until late in the seventeenth century. It is likely that fishermen from Cuba began plying their trade in the waters off Florida's southwest considerably earlier. These fishermen adopted the practice of making temporary camps (known as *ranchos*) onshore, at places like Cape Sable on the mainland and in the keys, to prepare and dry fish. They hired natives to help with this work, and many South Florida Indians learned at least some Spanish. Franciscan priests returned to the Calusa at Calos in 1697, but they were openly mocked, abused, and barely escaped with their lives. In the early eighteenth century, the Spanish tried bringing some South Florida Indians to Cuba, but almost all died of disease. Jesuits returned to Tequesta in 1743 to establish a mission. They found about 100 Indians belonging to the



Figure 1–9, Menéndez de Avilés

³⁷ Jerald T. Milanich, *Laboring in the Fields of the Lord: Spanish Missions and Southeastern Indians* (Washington, DC: Smithsonian Institution Press, 1999), 86, 96–97; Eugene Lyon, “Settlement and Survival,” in Gannon, ed., *The New History of Florida*, 44, 50.

Tequesta, Calusa, and several other tribes. The Jesuits' superiors soon concluded that the mission was not worth its cost, and the priests were withdrawn.³⁸

Throughout the seventeenth and eighteenth centuries, the native population of the Florida peninsula declined precipitously. European diseases, such as smallpox and influenza, were a primary cause, but deadly raids by the English and their Indian allies played a significant role, too.

The English settled at Charleston (originally Charles Towne) in the Carolinas in 1670. As that colony grew, it posed a serious threat to Spain's claim to the entire Southeast. By the late seventeenth century, the Spanish and English had identified some 50 to 100 Indian groups in this region. The names applied by the Europeans were based on linguistic or geographic factors and often were meaningless to the native people themselves. Most of the native groups living in present-day South Carolina, Georgia, Alabama, and Florida belonged to a linguistic and cultural tradition known as Muskogee (or Maskókî). Among these were the Calusa, Tequesta, Appalachian, Alabama, Choctaw, Chickasaw, Oconee, Ochisi, Chiaha, Yamasee, and Guale. Although related, the languages these groups spoke were not always mutually intelligible. As historian Patricia Wickman has demonstrated, these various groups ranged widely within the Southeast and had mechanisms for incorporating members from other groups into their polities. At times these groups made war upon one another as well as on groups coming from other linguistic traditions (such as the Cherokee, who spoke an Iroquoian language). Once Spain, England, and France all had colonial presences in the Southeast, many of these groups took advantage of European rivalries to secure better trade terms or gain a military ally.³⁹

Inevitably, colonial settlements in the Southeast became involved in European wars. During the War of the Spanish Succession (known as Queen Anne's War in North America), 1701–1714, Indian forces led by white Carolinians devastated the Spanish missions of North Florida. In 1715, a number of native groups, including Yamasees, Apalachees, Chickasaws, and Cherokees, rose up against the English settlers of Carolina. The Indians were defeated in what became known as the Yamasee War, and many sought refuge in Spanish Florida. That members of some of the same native groups who made war on the Spanish missions in 1702 and 1704 were establishing villages in Florida with Spanish approval in 1717 testifies to the fluid political situation in the colonial Southeast. In South Florida, meanwhile, fishermen and others from the Caribbean islands continued

³⁸ Milanich, *Laboring*, 167–68, 192–93; Charlton Tebeau, *Man in the Everglades: 2000 Years of Human History in the Everglades National Park*, 2nd rev. ed. (Coral Gables, FL: University of Miami Press, 1968), 59.

³⁹ Patricia Wiles Wickman, *The Tree That Bends: Discourse, Power, and the Survival of the Maskókî People* (Tuscaloosa: University of Alabama Press, 1999), 2–10; J. Leitch Wright Jr., *Creeks & Seminoles: The Destruction and Regeneration of the Muscogulge People* (Lincoln: University of Nebraska Press, 1986), 1–5.

to trade with the Calusa and other groups, exposing them to European diseases and sometimes supplying them with rum. At the conclusion of the Seven Years War in 1763, Spain ceded Florida to Britain. At this point, Spanish control was confined largely to the areas immediately surrounding St. Augustine and Pensacola (figure 1–10, St. Augustine in the eighteenth century). It is uncertain how many members of the native groups that the Spanish had first encountered in the early sixteenth century—the Calusa, Tequesta, Ais, Appalachee, Timucua, etc.—remained in 1763. Disease, warfare, and social upheaval had taken a horrendous toll. When the last Spanish officials left for Cuba in 1764, they took with them fewer than 300 Indians. Many historians have concluded that among them were the last survivors of the Calusa and Tequesta. The Spanish, however, had little knowledge of conditions in South Florida, and some members of these tribes may well have remained in South Florida or in the keys. By the 1760s, however, Indians whose homelands once had been farther north were well-established in Florida.⁴⁰



Figure 1–10, St. Augustine in the eighteenth century

⁴⁰ Milanich, *Laboring*, 175, 183–87; James W. Covington, *The Seminoles of Florida* (Gainesville: University Press of Florida, 1993), 5; Charles W. Arnade, “Raids, Sieges, and International Wars,” in Gannon, ed., *The New History of Florida*, 107–108.

Origins of the People Known as Seminoles

In the early 1700s, the Spanish were already referring to Florida Indians who declined to settle at missions as *indios cimmarones*. Over time, this adjective meaning “wild,” “untamed,” or sometimes “fugitive,” became a noun and was applied to all Florida Indians, particularly in its anglicized form, “Seminole.” Historians and anthropologists agree that the great majority of the people who became known as Seminoles were people of the Muskogee tradition from farther north.⁴¹ The Seminole tradition is often said to spring from the Creek Indian tradition, but it should be borne in mind that the term “Creek” is a generic one coined by the British. Over the course of the eighteenth century, the English increasingly applied the term to various peoples of the Muskogee tradition previously known as Ochisi, Alabama, Chiaha, Yamasee, etc.⁴² The dwindling of Spanish authority described above, and the constant pressure from Anglo-American settlers in Carolina and Georgia (established 1733) made relocation to sparsely populated North and Central Florida an attractive proposition for some Creeks. The initial locus of settlement was the prairies lying between the Suwannee and Withlacoochee Rivers. These Florida Indians ranged into the Big Cypress and the Everglades to hunt and may well have encountered remnants of the Calusa, Tequesta, and other Spanish-period tribes. Oral tradition among today’s Florida Indians supports the idea that some of these individuals became incorporated into the new Seminole bands.⁴³

After twenty years of British rule, Florida was returned to Spain by the 1783 Treaty of Paris, which also established the independence of the United States. No longer constrained by restrictions from London, Americans looked longingly at the rich lands lying between coastal Georgia and the Mississippi River. The incoming Spanish officials allowed British firms in Pensacola to continue trading with Southeastern Indians. During the War of 1812, British agents worked to arm Indian allies and encouraged them to attack Americans. As part of that conflict, Major General Andrew Jackson invaded Florida to break up British-allied Indian bands and prevent the British from using Pensacola to attack the U.S. Jackson also soundly defeated a major faction of Creeks at the Battle of Horseshoe Bend in 1814. He forced the Creeks to cede a vast acreage to the

⁴¹ From the late eighteenth century until 1962, the term Seminole was generally applied to all Florida Indians. The Seminole Tribe of Florida achieved federal recognition in 1957. In 1962, some Florida Indians sought and achieved separate federal recognition as the Miccosukee Tribe of Indians of Florida. In addition, there are a small number of “independent” Seminoles in Florida who have chosen not to affiliate with either of the federally recognized tribes. See Chapter 19.

⁴² The term Creek was originally applied just to the Ochisis but soon was more broadly used to describe numerous tribes living in the watersheds of the Chattahoochee and Alabama Rivers.

⁴³ John K. Mahon and Brent R. Weisman, “Florida’s Seminole and Miccosukee Peoples,” in Gannon, ed., *The New History of Florida*, 183–86; Brent R. Weisman, *The Unconquered People: Florida’s Seminole and Miccosukee Indians* (Gainesville: University Press of Florida, 1999), 13–14. This is a very cursory summary of a complex and often controversial history, but no more can be included here.

United States, causing more Indians to move into Florida. In 1817, the federal government opened the Alabama Territory, embracing present-day Alabama and Mississippi, to settlement, bringing waves of white settlers, many with slaves, to former Indian lands.⁴⁴

The Seminole Wars

The presence of thousands of Indians in Spanish Florida within striking distance of the rich cotton lands of Georgia, Alabama, and Mississippi was a source of considerable concern to many in the U.S. Raids from both sides of the vaguely defined border were a common occurrence. Especially troubling to U.S. planters was the refuge that Florida provided to escaping slaves. People of color who had liberated themselves crossed into Spanish territory and connected with the Seminole people. Many a Seminole village had an associated village of blacks. A force of more than 300 well-armed African Americans garrisoned a fort on the Apalachicola River that the U.S. was determined to eliminate. In April 1816, a lucky shot from an American ship destroyed this “Negro Fort” and killed most of its defenders. Two years later, Andrew Jackson led a force into Spanish Florida to disrupt and punish the Indians. These events of 1816 through 1818, which pitted U.S. forces against Seminoles and African Americans, became known as the First Seminole War. Realizing that it could not prevent these incursions and having plenty of other problems in its vast empire, Spain in 1819 agreed to sell Florida to the U.S. for five million dollars.⁴⁵

Florida was a U.S. territory from 1821 until 1845, when it was admitted as the 27th state. Tallahassee was made the capital, and the main focus of settlement was the region just south of Georgia (the present-day counties of Gadsden, Leon, Jefferson, and Madison) and in the lower reaches of the St. Johns River. Toward the end of the territorial period, tensions between white settlers and Seminoles broke out into war. The Second Seminole War (1835–1842), the most costly Indian war ever fought by the United States, brought some national attention to the Everglades region for the first time. During the course of the war, operations shifted ever farther south in the territory. The Seminoles had been hunting and fishing in the Big Cypress Swamp and the Everglades since the 1700s and knew the area well. As the U.S. Army and Navy sought to track down the remaining Indians in Florida, the Seminoles moved from camp to camp on high ground in the wetlands of South Florida. The navy also sought to keep the Indians from obtaining weapons and supplies from Cuban vessels plying the water off southwest Florida. Operating from bases at Key West, Table Top Key, and Biscayne Bay, the U.S. Navy made forays into the estuaries and rivers of the Everglades. The U.S. Army had outposts

⁴⁴ Weisman, 15.

⁴⁵ Mahon and Weisman, 190–92.

at Fort Lauderdale, along the Caloosahatchee River, and at Fort Dade, the future site of the city of Miami. Several smaller forts were established within the present boundary of Everglades National Park: Fort Poinsett at East Cape Sable, Fort Henry southwest of Fort Dade, and Fort Westcott, said to have been eight miles north of the mouth of Shark River.⁴⁶ (Figure 1–11, U.S. forces burning of Seminole town Pilak-li-ka-ha.)



Figure 1–11, U.S. forces burning of Seminole town Pilak-li-ka-ha.)

A notable event of the Second Seminole War was the U.S. Army’s capture and killing of an Indian chief known as Chekika. Chekika led a band of warriors, as many as 130, who were known as “Spanish Indians.” White Americans at the time distinguished these Spanish Indians from those they described as Seminoles.⁴⁷ A band led by Chekika raided Indian Key, not far from the U.S. Navy base on Tea Table Key, on August 7, 1840, killing Dr. Henry Perrine and five others. In 1838, Congress had granted Perrine an entire section of thirty-six square miles in the Everglades, running east from Cape Sable, to experiment with the introduction of tropical crops. Following the Indian Key attack, a U.S. force from Fort Dallas under Col. William S. Harney tracked Chekika to his camp

⁴⁶ Dovell, 60–67; James Hammond, *Florida’s Vanishing Trail* (N.p.: printed by author, 2008), 75; John C. Paige, *Historic Resource Study for Everglades National Park* (Denver: National Park Service, 1986), 33–42. Paige provides a detailed account of the military operations in the Everglades during the Second and Third Seminole Wars.

⁴⁷ The term Spanish Indian seems not to have had a precise meaning. It was sometimes applied to Indians who spoke Spanish or had connections to Spanish speakers from Cuba. It also may have implied that these were Indians descended from tribes, such as the Calusa and Tequesta who were present during the first Spanish period.

on a hammock in the East Everglades. The soldiers killed Chekika, strung up his corpse as a warning, and left the Everglades by way of the river that now bears Harney's name. Chekika's Hammock lies within Everglades National Park about a mile south of the Tamiami Trail, east of the Shark Valley Loop Road. By early 1842, the U.S. Army and the American public were thoroughly exhausted from fighting the Seminoles. Almost 3,000 Indians and associated blacks had been removed west of the Mississippi River while an estimated 300 still held out in the Big Cypress Swamp and Everglades. The U.S. government agreed to let these last remain on an informal reservation running roughly from the mouth of the Peace River in Charlotte Harbor to the Shark River.⁴⁸

Before many years had passed, some whites were seeking to settle these marginal South Florida lands that had been left by default to the Seminoles. The U.S. government worked to persuade the remaining Indians to move west, tried to cut off their trade with Cuba, and harassed them in other ways. The Seminoles resisted the pressure, with a band attacking U.S. troops on December 18, 1855, beginning the Third Seminole War. The army again made repeated raids into the Everglades and Big Cypress, destroying Indian camps, burning crops in the field, and killing or capturing anyone they could locate. The U.S. may have reoccupied Fort Poinsett at Cape Sable and also built a new camp, called Fort Cross, at the cape. Another facility, Camp Moulder, was established first on Chokoloskee Island and later on Pavilion Key in the Ten Thousand Islands. In May 1858, some 160 Indians under the leadership of Billy Bowlegs (Holata Micco) gave up the struggle and agreed to remove to Oklahoma. Some 100 to 150 Indians held out in the recesses of the Big Cypress and the Everglades, but the U.S. government tacitly allowed them to remain. No formal treaty concluded this last war. All of today's Seminole and Miccosukee Indians in Florida are descendants of this group of about 150 that remained.⁴⁹

⁴⁸ Paige, 48–51, 99–101; William C. Sturtevant, "Chakaika and the 'Spanish Indians': Documentary Sources Compared with Seminole Tradition," *Tequesta* 13 (1953):35–73.

⁴⁹ Paige, 58–74; Mahon and Weisman, 200–201.

Early White Settlement in the Everglades

Few white settlers were attracted to the Everglades region until fairly late in the nineteenth century. A federal act in 1842 granting 160 acres to settlers who staked a claim and remained for five years had little impact in South Florida. Although the Third Seminole War had ended in 1858, Indians remained in the area and white settlers often felt insecure. In addition, the Civil War and Reconstruction ensued almost immediately, slowing development in the region. During the Civil War, a U.S. naval commander noted that the city of Key West got most of its fresh meat, fish, and vegetables from farms on the mainland of Southwest Florida, indicating the presence there of a few hunters, ranchers, and farmers. Settlement was hampered because the region was remote, lacked good transportation, was flooded through much of the year, and had intense heat and humidity plus clouds of insects in the summer months. After the Civil War, cattle raising was practiced in the Caloosahatchee and Kissimmee River Valleys.

By 1900, a handful of settlers had made their way to the higher ground on the periphery of the Everglades, locating on the shores of Biscayne Bay and selected areas on the Gulf Coast, such as Chokoloskee Island and Cape Sable. They fished; hunted; raised sugar cane, coconuts, citrus, and other crops; and burned charcoal for sale at Cuba and Key West. The Seminoles remained in the area, mostly keeping to themselves. The Indians grew crops on isolated tree islands and generally visited white settlements only to trade skins and bird plumes for items they did not produce themselves. With no railroads or all-weather wagon roads, settlers depended mostly on boats. Key West, more than any place on the South Florida mainland, was the locus of economic activity in the region. The 1880 census recorded 257 white residents in Southeast Florida.⁵⁰

More extensive settlement of the Everglades would not be attempted unless the marshy land somehow could be drained. This was an ambition of some Americans as early as the 1830s. Florida pioneer John Lee Williams wrote in 1837 of the wonderful possibilities for agriculture in the Everglades if the region's existing rivers could be deepened to carry excess water to the sea and the water level thereby reduced by about ten feet. Florida's representatives pressed the U.S. Congress in the 1840s for action on draining the Everglades. In 1847, President James Polk's Secretary of the Treasury, Robert J. Walker, commissioned T. Buckingham Smith of St. Augustine to investigate the Everglades and prepare a report on the feasibility of draining the region for agriculture. Smith's 1848 report concluded that the area could be drained by converting existing rivers to canals and digging additional canals within the Everglades. He put the cost of such drainage works

⁵⁰ Dovell, 104–109; Michael Grunwald, *The Swamp: The Everglades, Florida, and the Politics of Paradise* (New York: Simon & Schuster, 2006), 73–75; Joe Knetsch and Paul S. George, "A Problematical Law: The Armed Occupation Act of 1842 and its Impact on Southeast Florida," *Tequesta* 53 (1993):77–78; James W. Covington, "The Indian Scare of 1849," *Tequesta* 21 (1961):53–63.

at no more than \$500,000 and forecast that sugar, rice, cotton, coffee, citrus, coconuts, and other crops could be grown. The report included statements from Seminole War veterans promoting the idea of drainage.⁵¹

Major public works projects, such as the drainage of wetlands, were not considered a federal responsibility during this period, and Florida's politicians worked to get the vast federal acreage in the Everglades transferred to the state. In September 1850, President Millard Fillmore signed an act commonly known as the Swamp and Overflowed Lands Act.⁵² Under this law, some 20 million acres of federal land, in the Everglades and many other parts of Florida, ultimately would be given to the state. To coordinate the transfer and development of this land, the Florida legislature in 1855 established the Board of Trustees of the Internal Improvement Fund (IIF). The board was given the authority to sell state land and also to convey it to private parties who would undertake drainage or transportation projects. At first the board was much more interested in transportation projects—canals and railroads—than in drainage. Questionable actions by the board resulted in lawsuits, and in 1872, a federal court placed the fund in receivership. This meant the fund's board could dispose of land by cash sale only, which precluded drainage schemes. Land grants from the board were the only incentive available to entice private interests to take on expensive drainage projects.⁵³

The first serious effort to drain the Everglades was undertaken by a saw and file manufacturer from Philadelphia, Hamilton Disston. Described by Michael Grunwald as a “visionary capitalist,” Disston first came to Florida on a fishing trip in the 1870s. Excited by the possibilities of development in the Everglades, Disston in January 1881 made a bargain with the Trustees of the IIF to drain some 12 million acres. In return, he would receive one-half of the acreage that he was able to reclaim. The fund, however, was still mired in lawsuits and receivership so Florida Governor William Bloxham persuaded Disston to purchase outright some four million acres in the Kissimmee and Caloosahatchee watersheds. This brought the state a million dollars, restored solvency to the IIF, and allowed it to grant land to Disston's company as the drainage work proceeded. Disston's plan was to permanently lower the level of Lake Okeechobee by channelizing portions of the Kissimmee River, converting the Caloosahatchee River into a discharge canal, and digging at least one canal south from Lake Okeechobee through the Everglades. Between 1882 and 1884, considerable work was done in the Kissimmee and Caloosahatchee River watersheds. In the fall of 1883, a 130-foot steamboat, the *Bertha Lee*, used the newly

⁵¹ Dovell, 57, 82–91; John Lee Williams, *The Territory of Florida, or, Sketches of the Topography, Civil and Natural History, of the Country, the Climate, and the Indian Tribes: from the First Discovery to the Present Time, with a Map, Views, & c.* (New York: A. T. Goodrich, 1837).

⁵² The official title is An Act to Enable the State of Arkansas and Other States to Reclaim the Swamp and Overflowed Lands within Their Limits.

⁵³ Dovell, 98–115; Grunwald, 67. Originally, the five board members were the state's governor, comptroller, treasurer, attorney general, and registrar of lands.

constructed and improved waterways to make its way from Ft. Myers to the town of Kissimmee. Later, in 1888 and 1889, about ten miles of canal were dug south from Ritta on Lake Okeechobee into the Everglades marsh. This canal later was completed by the state as the Miami Canal (see below). According to a state audit, Disston permanently reclaimed about 80,000 acres in the upper Kissimmee Valley. He died in 1896, and the company he founded did no more drainage work after that date.⁵⁴

Until recently, most historians concluded that although he succeeded in reclaiming a portion of the upper Kissimmee basin for agriculture, Disston ultimately failed. A careful examination of historical records by McVoy et al. indicates that Disston may in fact have achieved a three- to five-foot reduction in the level of Lake Okeechobee that lasted for a number of years. This estimate is based on eyewitness observations rather than measurements of lake levels and therefore has a degree of imprecision. It seems apparent, however, that after the mid-1880s, the level of Lake Okeechobee had sunk below that of the surrounding marsh and that the Everglades from that point no longer received significant outflow from the lake, as it had for centuries, if not millennia. If this was the case, the dramatic changes to Everglades hydrology began not with the state's efforts in the 1910s but two decades earlier.⁵⁵

Following the abandonment of Disston's project, drainage of the Everglades was not pursued until the Progressive Era of the early twentieth century. Two Florida governors, William Sherman Jennings (1901–1905) and Napoleon Bonaparte Broward (1905–1909), for the first time committed the state to the drainage and reclamation of the Everglades. In the years before Jennings took office, the state legislature and the trustees of the IIF had made lavish land grants to railroads. Governor Jennings refused to fulfill what he believed were illegal commitments, and the IIF was again tied up in litigation. The state did not proceed with Everglades drainage during Jennings's term. Jennings, however, drew the attention of the state's residents and outside investors to the Everglades. Broward then made reclamation of the Everglades the cornerstone of his successful 1904 gubernatorial campaign. One of his first acts was to appoint Jennings, the outgoing governor, as legal counsel to the Trustees of the IIF, and the two men worked together to promote drainage.⁵⁶ Broward then got the legislature to create a state Board of Drainage Commissioners, which had the same membership as the board of trustees of the IIF. This new board then established an Everglades Drainage District (EDD) embracing some 4,300,000 acres, with powers of taxation within the district (figure 1–12 Everglades Drainage District). Large land owners in the district challenged the tax in the courts, but

⁵⁴ Grunwald, 85; Dovell, 122–26, 135–38; McVoy et al., 157–62, supplementary materials on DVD, 17.

⁵⁵ McVoy et al., 162–63.

⁵⁶ Jennings and his wife, May Mann Jennings, were instrumental in establishing Royal Palm State Park in the Everglades (see Chapter 2). The Jenningses and others in the period saw conservation and drainage in the Everglades as compatible goals.

Broward moved forward with the limited funds available to the IIF. In July 1906, dredging began on a canal from Lake Okeechobee to the New River, which discharges to the Atlantic at Fort Lauderdale.⁵⁷

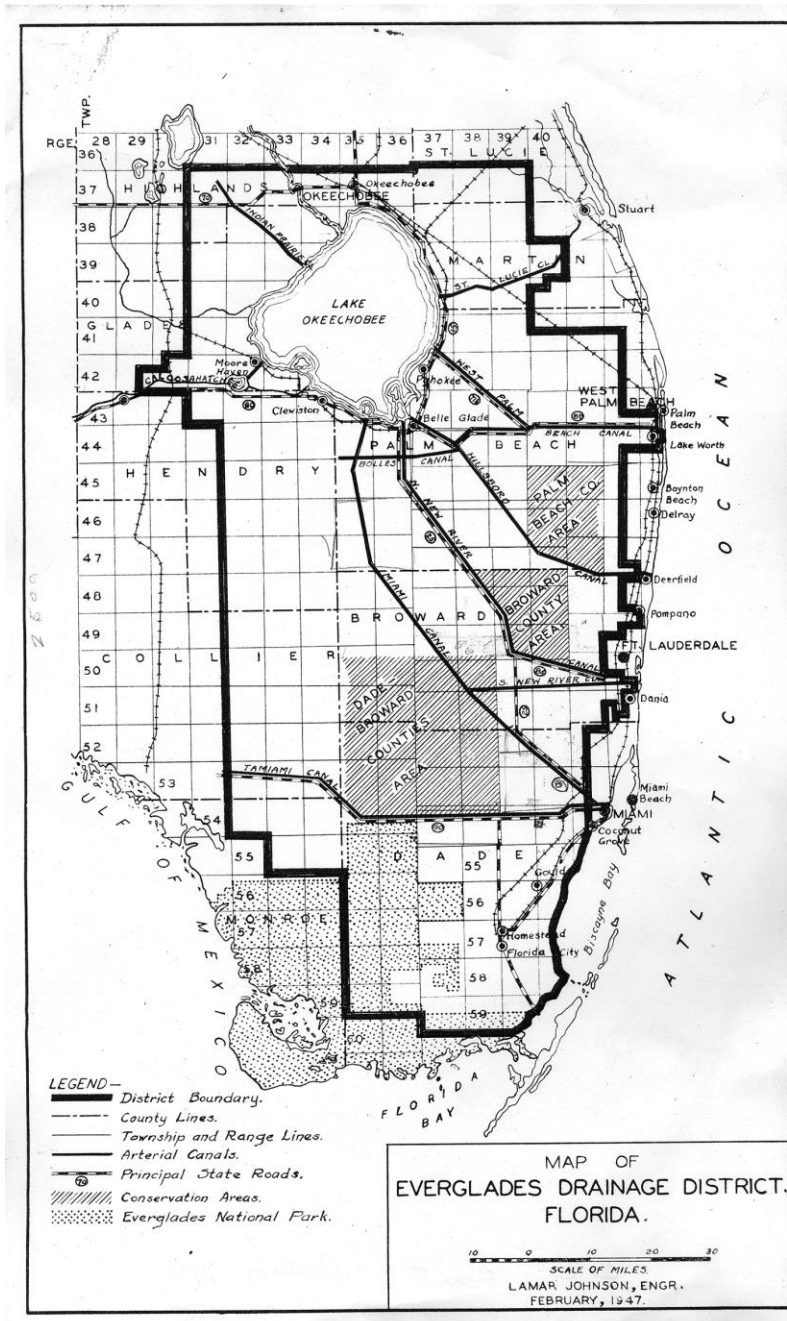


Figure 1-12 Everglades Drainage District

⁵⁷ Dovell, 194-215; McCally, 90-92.

Minimal study of climate, hydrology, and soil conditions preceded the beginning of the state's effort. In 1907, the Bureau of Irrigation and Drainage Investigations of the U.S. Department of Agriculture (USDA) began field work necessary to prepare a report on Everglades drainage. Litigation against the IIF was settled out of court in December 1907, and the trustees were then able to sell 500,000 acres to Richard J. Bolles. This allowed the dredging work to be expanded to improving the existing Caloosahatchee Canal and completing the canal begun by Disston to connect Lake Okeechobee with the Miami River. Under pressure from Governor Albert W. Gilchrist (1909–1913), extracts from the USDA report, written by engineer James Wright, were released without adequate review in March 1909. In the words of Michael Grunwald, the Wright report was “a mess of bad data, bad analysis, and bad recommendations.” Nevertheless, it appeared to give the imprimatur of the USDA to Everglades drainage, and dredging work increased dramatically during Gilchrist's administration. Hearings in the U.S. House of Representatives in 1912 revealed the flaws in the Wright report and cast a shadow over the state's Everglades reclamation work.⁵⁸

The uproar created by the revelations concerning the Wright report became the responsibility of Florida's next governor, Park Trammell (1913–1917). He secured passage of new state legislation that gave the EDD authority to borrow money and to issue as much as \$6 million in bonds. This borrowing was to be supported by the proceeds from a new tax within the district. In a further effort to restore confidence, the state arranged for an independent body, the Everglades Engineering Commission, to review the entire Everglades project and provide recommendations. Headed by Isham Randolph, a nationally prominent hydraulic engineer, the commission issued its report in October 1913. The commission concluded “that the drainage of the Florida Everglades is entirely practicable” and economically sound. The commission's most important recommendation was for construction of a major new canal from the eastern shore of Lake Okeechobee to the St. Lucie River, which was meant to draw large volumes of water from the lake and prevent flooding. It further recommended digging additional diagonal canals north of the Miami Canal, the improvement of existing canals, and building a canal from the northwest shore of Lake Okeechobee. The Randolph report served as the master plan for Everglades drainage from 1913 until the hurricanes of the 1920s.⁵⁹

Although the state now had a plan, it continued to struggle with financing its implementation. By the early 1920s, Florida had expended \$13 million on Everglades drainage. The monies came entirely from EDD taxes and borrowing; the legislature declined to make appropriations from the state's general fund. In addition to improving Disston's Caloosahatchee Canal, the state had completed the North New River Canal (1912), the South

⁵⁸ Dovell, 243–44, 283; Grunwald, 154–57, quotation at 157.

⁵⁹ Dovell, 341–49; McCally, 109–115.

New River Canal (1913), the Miami Canal (1913), the Hillsboro Canal (1915), and the West Palm Beach Canal (1920). The soils dredged up to create these “muck” canals rapidly subsided or oxidized, leaving the water level surrounding the canals the same as the level within the canals. The St. Lucie Canal was not completed until the 1930s. In 1921, the EDD began construction of a muck levee on Lake Okeechobee’s south shore, meant to protect the farms and towns that had been established there. Many of the existing canals were in need of dams and locks to prevent water from running back toward the big lake at times of low water. Canals were not always well maintained, and unanticipated problems emerged. For example, the carrying capacity of some of the diagonal canals had actually decreased because the soil on their banks had subsided or had become choked with silt and water hyacinths.⁶⁰

The Tamiami Trail

In addition to the state’s canal building, the construction of a highway across the Everglades in the 1910s and 1920s influenced the region’s hydrology and settlement patterns. As early as 1914, voices were calling for a road across the Everglades and the Big Cypress Swamp to link the developed areas on the two coasts. The project soon was branded the Tamiami Trail, conjoining the names of the two terminus cities, Tampa and Miami. The portion of the road on the Gulf Coast from Naples to Tampa presented many challenges, notably bridging the Caloosahatchee River for the first time. Building the east-west section through the wetlands was a more daunting challenge. Dade and Lee Counties began the project in September 1916, joined by Collier County when it was split off from Lee in 1923. The state assumed responsibility in 1924, and the 273-mile-long road was dedicated to great fanfare in April 1928. The Tamiami Trail was constructed with limestone rock blasted and dredged up to create an elevated roadway thirty feet wide. The adjacent dredged area, sometimes known as a borrow trench, on the north filled with water and became the Tamiami Canal (figure 1–13, drill barge on the Tamiami Canal). Once completed, the road was heavily used by tourists and provided enhanced access to markets for some farmers and loggers. Building the trail, however, ended up adding to the negative environmental effects of drainage canals. Although bridges and later culverts were constructed to carry water under the roadbed, they had very limited capacity. The elevated trail acted as a dam, cutting off sheet flow and generally lowering water levels to the south. Once the trail opened, some Miccosukee Indians began to relocate from their remote camps, many of them in the Big Cypress Swamp, to camps along the trail. The Trail Indians, as they came to be known, sold souvenirs and created diversions, such as alligator wrestling to entertain tourists. Other Indians gravitated to villages operated commercially by whites in the Miami area.⁶¹

⁶⁰ McCally, 131–32; Grunwald, 182–84; McVoy et al., 32–34.

⁶¹ Gary Garrett, “Blasting Through Paradise: The Construction and Consequences of the Tamiami Trail,” in *Paradise Lost?: The Environmental History of Florida*, ed. Jack E. Davis and Raymond Arsenault (Gainesville: University Press of Florida, 2005), 270–71; McVoy, et al., 35–36, 95–96; Paige, 116–24; Jack E. Davis, *An Everglades Providence: Marjory Stoneman Douglas and the American Environmental Century* (Athens: University of Georgia Press, 2009), 291–92.

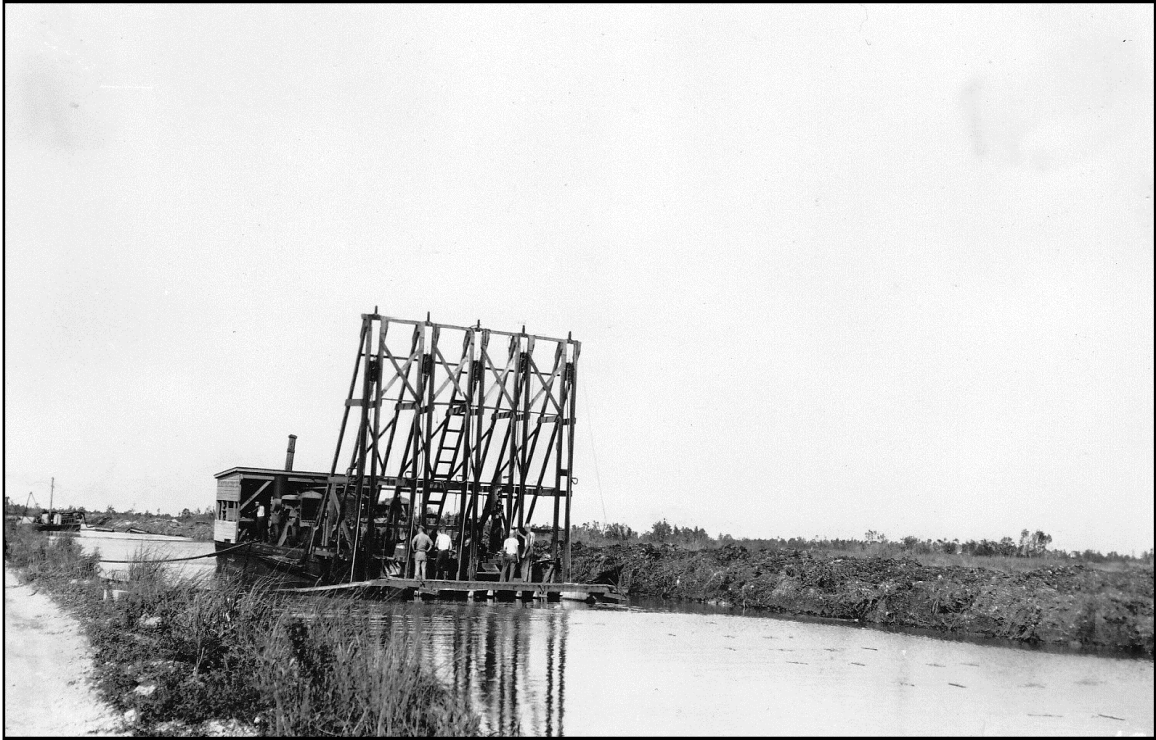


Figure 1–13, drill barge on the Tamiami Canal

Settlement and Farming in the Everglades after the State’s Drainage

The construction of canals and roads in the first three decades of the twentieth century influenced settlement patterns and had far-reaching effects on the ecology of the Everglades. The state’s activities had the effect of lowering water levels throughout the region. This made agriculture more feasible in the deeper muck soils south and east of Lake Okeechobee, which previously had been sawgrass marsh or custard apple swamp. Farther south, the lowered water levels probably made winter vegetable growing more viable in the transverse glades and on the very eastern edges of the Everglades. It also affected the behavior and abundance of game and fish, which remained important resources for the area’s residents.

The Upper Glades

At the time that the Trustees of the IIF began selling land in 1908, some large tracts were purchased by speculators who immediately began reselling smaller parcels. A land boom was soon under way in the Upper Everglades. Wildly optimistic advertising convinced buyers that a farmstead of just 10 acres on the rich reclaimed muckland surrounding Lake Okeechobee would be profitable. This quickly proved to be an illusion—drainage had not progressed far enough, and vegetable farmers lacked transportation to get crops to markets in cities. Sustained farming efforts did not get underway until railroad links were

available. Growth along the coasts of South Florida had already gotten a big boost from the efforts of two railroad entrepreneurs: Henry M. Flagler and Henry Plant. Flagler extended his Florida East Coast Railway to West Palm Beach in 1894, to Miami in 1896, and to Homestead in 1904. On the Gulf Coast, Plant developed an extensive network of rail and steamship lines. His Atlantic Coast Line Railroad reached Ft. Myers in 1904. In January 1915, the Florida East Coast Railway extended a branch line to Okeechobee City on the lake's north shore, and in 1918, the Atlantic Coast Line Railroad reached Moore Haven on the south shore (figure 1–14, mural celebrating arrival of railroad at Okeechobee). These rail links allowed farmers in the Upper Everglades to ship produce in refrigerated cars and also served a thriving Lake Okeechobee commercial fishery focused on catfish.⁶²



Figure 1–14, mural celebrating arrival of railroad at Okeechobee

Farmers in the early 1920s encountered a number of difficulties in bringing drained land into production. Clearing the land of sawgrass and pond apple trees turned out to be arduous labor. After being drained, the muck soils of the area compacted and oxidized and the ground sank; the dried soils also sometimes blew away and easily caught fire. In addition, the soils lacked some needed nutrients (e.g., phosphorous, potassium, copper, and manganese), and many crops failed to thrive. Not until 1927 did scientists come up with an appropriate fertilizer formula to make up for these deficiencies. Still, some farmers, especially those with previous experience with muck soils, were able to turn a profit working land on the shores of Lake Okeechobee and on the eastern edge of the

⁶² McCally, 120–21; Lawrence E. Will, *A Cracker History of Okeechobee* (Belle Glade, FL: Glades Historical Society, 1964), 120–26.

Everglades Basin (figure 1–15, Housing for black tomato field workers). Almost all of this progress was wiped out by the hurricanes of 1926 and 1928. The hurricane of September 1926 destroyed portions of the muck dike on the south shore of Lake Okeechobee between Newhall and Clewiston. Worst hit was Moore Haven, where a wall of water ten to fifteen feet high wiped out the town. The storm killed around 400 and left 40,000 homeless in South Florida. The September 1928 hurricane was even more devastating. It affected the whole southeastern shore of the lake, claiming 2,500 lives, most of them African-American agricultural laborers (figure 1–16, Belle Glade after the 1928 hurricane). Damage was estimated at \$4 million. It was abundantly clear by the winter of 1928/29 that the problem of Everglades drainage was far from solved.⁶³



Figure 1–15, Housing for black tomato field workers

The damage wrought by the hurricanes brought the U.S. Army Corps of Engineers into the Everglades water management picture for the first time. By early 1929, it was clear to all that the state's emphasis on reclaiming marsh land for agriculture had neglected the flood danger posed by Lake Okeechobee. The Corps disclaimed any responsibility for drainage per se, but navigation and flood control were within its purview. After studying the situation, the Corps recommended improving the water-discharging capacities of the St. Lucie and Caloosahatchee Canals and the construction of a much higher levee all along the south bank of Lake Okeechobee and at selected places on its other banks. The Congress authorized this work in July 1930, with the proviso that the State of Florida contribute \$2 million to its cost. The Congress later reduced the state's portion to \$500,000. Work commenced in November 1930 on what ended up becoming an 85-mile-long barrier, known as the Herbert Hoover Dike, averaging between thirty-four and thirty-eight feet above sea level. This cost federal taxpayers \$18.5 million and blocked lake views from all the surrounding countryside. In the aftermath of the hurricanes, the state appointed another board of engineers to revisit drainage and flood control issues. One of its recommendations was the dredging of new, shorter east-west canals through

⁶³ Dovell, 412–14, 427, 464; Hanna and Hanna, 255–61; Grunwald, 187–88, 192–93.

the Everglades to the Atlantic. The EDD, however, already had a huge burden servicing its existing bond debt. With the onset of the Great Depression, substantially no additional drainage work was completed by the state for two decades.⁶⁴



Figure 1–16, Belle Glade after the 1928 hurricane

The Lower Glades

The Lower Glades largely lacked the rich muck soils of the Upper Glades. Residents in this region continued a way of life centered on hunting, fishing, and limited agriculture (Figure 1–17, Coconuts awaiting shipment at Cape Sable). Cash income came largely from selling produce, hides, fish, and plumes;⁶⁵ trading with the Indian population; serving as guides for sportsmen; burning charcoal; collecting tanbark; and harvesting a local plant known as coontie to produce starch. The population on the keys and the mainland from Cape Sable north into the Ten Thousand Islands grew slowly. By 1900, Flamingo near East Cape Sable and Chokoloskee Island were established villages. Most of the settlers were white, but some African Americans were employed as farm laborers and boat hands. East of the Everglades, the shores of Biscayne Bay attracted citrus growers, sponge fishermen, and others. Many of South Florida’s residents continued to fish, hunt, and gather in the interior marshes of the Everglades, often setting up temporary camps. A substantial industrial operation involving the extraction of tannin from the bark of mangrove trees operated from 1904 to 1923 on Shark River within what would become the park (figure 17–5). The Manetta Company built a 2.5-acre platform over the mangrove swamp, on which it constructed separate housing for white and black

⁶⁴ Dovell, 432–33, 483–86; Hanna and Hanna, 264–66.

⁶⁵ See Chapter 2 for a more detailed discussion of the plume and pelt trade.

workers, machine shops, offices, and drying sheds. Production stopped after a hurricane in 1910, but it resumed during World War I and continued sporadically until 1923.⁶⁶



Figure 1-17, Coconuts awaiting shipment at Cape Sable

The construction of the Ingraham Highway from Miami to Royal Palm Hammock in 1916 and all the way to Flamingo by 1922 improved access to some areas. When Henry Flagler decided in 1902 to extend his Florida East Coast Railroad to Key West, he had two routes surveyed. One was through the Everglades from Homestead to Cape Sable. This route was not selected for the railroad, but Flagler hoped to profit from the Everglades land he had received from the state as compensation for laying track down the Atlantic Coast. To market this real estate, Flagler had formed the Model Land Company, headed by his key lieutenant, James E. Ingraham.⁶⁷ This company and another Flagler outfit, the Dade Muck Company, worked with the Dade County Commissioners in planning a motor road from Homestead to Cape Sable by way of Royal Palm Hammock. The road was named the Ingraham Highway in honor of James Ingraham.⁶⁸

The J. B. McCrary Company began dredging operations in 1915 along the surveyed route of the new road. As with the Tamiami Trail, the road bed was created by excavating fill from the marsh adjacent to the highway, creating a “borrow” canal next to the road. As

⁶⁶ The tannin extract was used in tanning leather. Before the introduction of electric motors beginning in the 1920s and 1930s, a tremendous amount of leather was required by American factories for the belts that transferred power from drive shafts to individual machines. See Chapter 17 for the current status of the Shark River factory site. Tebeau, 118–20.

⁶⁷ Ingraham had previously worked for another Florida railroad builder, Henry Plant.

⁶⁸ Paige, 181–82; Mrs. Henry J. Burkhardt, “Starch Making: A Pioneer Florida Industry,” *Tequesta* 12 (1952):47–54.

detailed below in Chapter 2, a barely passable road was built from Homestead to Royal Palm Hammock by November 1916. Slowed by the American entry into World War I in April 1917, construction efforts brought the road to the Monroe County line by 1920. Finally, in 1922 the road was completed to the vicinity of Coot Bay and Mud Lake. Paralleling the road was the borrow canal, known as the Homestead Canal. From Royal Palm Hammock, the highway ran southwest, then west to Sweet Bay Pond, then south again before angling off the southwest. Just south of Coot Bay, a spur road ran south to Flamingo, flanked by the Flamingo (later Buttonwood) Canal. The Homestead Canal extended another eight miles west to Lake Ingraham, but it is unclear whether a graded road was ever constructed along this stretch. As completed, the Ingraham Highway had a thirty-seven-foot right-of-way. The road was rock-surfaced only in Dade County; the Monroe County portion had a marl surface.⁶⁹

Ingraham Highway was a primitive road, and the Monroe County section was often impassable during the rainy season. The road's sharp turns and the adjacent canal made it hazardous for motorists. When portions of the road were flooded during the rainy season, small boats could navigate the canal. A few entrepreneurs attempted agriculture along the route of the highway. One was Governor Jennings's widow, May Mann Jennings, who had 300 acres of orange trees on her Madeira Farms property.⁷⁰ Hopeful farmers dug several canals at Cape Sable to drain the land for agriculture. These canals were counterproductive, allowing seawater to saturate the coastal prairies and ruining their agricultural potential. The Model Land Company subdivided some of its property at Cape Sable and built a small clubhouse and swimming pool. Its efforts to sell lots for vacation homes were a failure. The Ingraham Highway reoriented the economic activity of Cape Sable and Flamingo from Key West to Homestead and Miami, allowing commercial fishermen and others to move their products to market by truck. By the mid-1930s, more than a hundred fish houses were operating from Chokoloskee to Cape Sable, some of them at Flamingo and Snake Bight in what would become Everglades National Park. Clam beds once extended from Chokoloskee south to the area of Harney River. Residents gathered clams and brought them to two canneries on Marco Island farther north on the Gulf Coast. The highway also gave hunters better access to the Everglades and provided access to the Miami market for moonshiners and liquor smugglers.⁷¹

⁶⁹ Mance Buttram, Christine Trebellas, Melissa Memory, and Laura Ogden, *A Cultural Resource Assessment of the Old Ingraham Highway and Homestead, East Cape Sable and Buttonwood Canals* (Homestead, FL: Everglades National Park, July 2009), 34, 41.

⁷⁰ A 1953 park publication noted that "the old cultivation rows" on Jennings's property were still visible approximately 12 miles inside the park along the Ingraham Highway. "Self Guiding Tour into Everglades National Park," Jan. 1953, NARA M-A, RG 79, 79-62A-305, box 110.

⁷¹ Paige, 87, 181-82; Tebeau, 104, 113-17; Linda D. Vance, "May Mann Jennings and Royal Palm State Park," *Florida Historical Quarterly* 45/1 (July 1976):5-6; Buttram, Trebellas, Memory, and Ogden, 33-34, 45, 47.

A major real estate boom hit Florida's Atlantic Coast in the 1920s. Miami was the epicenter of this speculative mania, with building lots often changing hands several times a day, each time at a higher price. Many were induced to buy Everglades land sight unseen. The Tropical Development Company bought three sections of land (more than 100 square miles) in the Lostmans River area and planned a subdivision called Poinciana. The company established a sales office on Onion Key and sold almost ten thousands lots, mostly to out-of-state buyers. The company claimed that many of the properties fronted Lostmans River, but all of them were at least a mile away in mangrove forests. The Florida boom was already on shaky ground when the September 1926 hurricane blew away the operation on Onion Key. The collapse of Poinciana left many real estate title issues that would confront the NPS during land acquisition in the 1950s (see Chapter 6).⁷²

By the late 1920s, the Everglades had already been dramatically affected by drainage canals and road building. The lowering of water levels had made more intensive agriculture possible in the northern Everglades and a few eastern sections of the Lower Glades. The presence of the Ingraham Highway provided easier access to markets for fishermen at Flamingo and nearby areas. Most of the Everglades, however, especially the 1.5 million acres of the ridge and slough landscape, remained unsettled, except for a handful of Seminoles and whites who had camps on tree islands. The collapse of the real estate boom slowed economic activity in the region several years before the onset of the national Great Depression. Many, however, still hoped to make the Everglades a major agricultural area. Additionally, as will be shown in the next chapter, some also wanted to preserve portions of the Everglades.

⁷² Paul S. George, "Brokers, Binders, and Builders: Greater Miami's Boom of the Mid-1920s," *Florida Historical Quarterly* 65/1 (July 1986):27–28; "1,350 Still Paying Taxes to Phantom Town," *Miami Herald*, Sept. 22, 1958; Tebeau, 113–17.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 2:
Early Conservation Efforts in the Everglades

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Travelers and Naturalists Draw Attention to the Everglades

Until late in the nineteenth century, few Americans knew very much about the Everglades. Seminole Indians had hunted, fished, and gathered in the area since the eighteenth century. Beginning shortly after the Civil War, a few white settlers and a handful of black agricultural laborers had begun to settle the scattered points of high ground along the Gulf Coast from the Ten Thousand Islands south to Cape Sable. Typically these newcomers farmed on existing mounds created by prehistoric Native Americans. These new residents were not connected to national channels of communication, though, and what they knew of the region was not widely shared. From about 1880, sportsmen and naturalists visited the Everglades and surrounding waters in increasing numbers, almost always relying on locals to guide them. The visitors then wrote about their experiences for a national audience, adding to the general knowledge of the area and its unique natural attributes. This growing awareness was a first step in a slowly building movement to get a portion of the Everglades preserved.

A notable early visitor to the Everglades was John James Audubon, the great student and painter of American birds. Audubon visited Indian Key, Sandy Key, and Cape Sable in April and May 1832 and was awestruck by the sight of flocks of flamingos soaring over the Everglades (figure 2–1, Flamingos in the Bahamas). His *Birds of America* contained images of a flamingo, a roseate spoonbill, and an anhinga. During the winters of 1878/79 and 1880/81, Dr. James A. Henshall explored Florida Bay and the Gulf Coast of the Everglades, resulting in an 1884 book, *Camping and Cruising in Florida*. Two expeditions sponsored by the *New Orleans Times-Democrat* in the 1880s got widespread coverage in newspapers nationwide. The first trip, in late 1882, went down the Kissimmee River, across Lake Okeechobee, and to the Gulf via the Caloosahatchee River. The next year, Major Archie P. Williams led a grueling 26-day trek from the southern shore of the big lake through the Everglades Basin and down the Shark River. In 1892, railway tycoon Henry Plant dispatched James E. Ingraham to survey a possible route for a rail line from Ft. Myers across the Everglades to Miami. Ingraham's party of twenty white men and two black cooks had a rough time of it. They were actually heading away from Miami when they met an Indian, Billy Harney, who guided them safely out of the marsh. Henry Plant decided against a rail line through the Everglades. In 1896, Hugh L. Willoughby crossed the Everglades starting from the Harney River and eventually emerged at the Miami River, resulting in his 1898 book, *Across the Everglades: A Canoe Journey of Exploration*. Between 1900 and 1919, archeologist



Figure 2–1, Flamingos in the Bahamas

Clarence Bloomfield Moore made several trips to the lower Gulf Coast of Florida and published some of his results.⁷³

After the railroad reached Homestead in 1904, it became easier for naturalists and others to make their way into the eastern portions of the Everglades, almost always guided by local whites or Indians. John Kunkel Small, curator of the New York Botanical Garden, devoted much of his professional life to studying Florida’s plant life. Small first visited South Florida in 1901 and from then until his death in 1938, he published extensively on Everglades plant life. Many of Small’s articles appeared in *The Journal of the New York Botanical Garden*. In 1929, Small was one of the first to warn of the damage being done in Florida by ill-considered drainage schemes in his book *From Eden to Sahara—Florida’s Tragedy*.⁷⁴

Dr. Small was not the only naturalist who took an interest in the Everglades. After retiring from the Smithsonian Institution in 1905, Charles Torrey Simpson built a house at Lemon City on Biscayne Bay. An expert on mollusks, Simpson made many collecting trips into the Everglades and its coastal waters. His best known work, *In Lower Florida Wilds*, appeared in 1920. The ornithologist Frank Michler Chapman, an active officer of

⁷³ Grunwald, 13; Hanna and Hanna, 108–109, 112–15; John E. Goggin, “Archeological Sites in the Everglades National Park, Florida,” typescript, June 1952, EVER 42242. A more detailed description of Everglades expeditions can be found in chapter 5 of John Paige’s *Historic Resource Study*, 150–66. Moore’s Florida reports have been reprinted in Jeffrey M. Mitchem, ed., *The West and Central Florida Expeditions of Clarence Bloomfield Moore* (Tuscaloosa: University of Alabama Press, 1999).

⁷⁴ A useful summary of Small’s work is found in chapter 11 of Gail Fishman, *Journeys Through Paradise: Pioneering Naturalists in the Southeast* (Gainesville: University Press of Florida, 2000).

the National Association of Audubon Societies, visited Cuthbert Rookery around 1908, and helped publicize the threats to the survival of wading birds. Of particular interest to John Kunkel Small and other naturalists was a large hammock about ten miles southwest of Homestead known as Paradise Key. The key later became known as Royal Palm Hammock for its concentration of this majestic palm. Edwin Safford, a botanist with the U.S. Department of Agriculture, in 1919 published *The Natural History of Paradise Key and the Nearby Everglades of Florida*. Botanist David Fairchild built a house on eight acres in Coconut Grove in 1926. As a plant explorer for the USDA, Fairchild had introduced thousands of species to the U.S. Two other Coconut Grove residents were Dr. John C. Gifford and Kirk Munroe. Gifford was a professor of tropical forestry at the University of Miami. Munroe, a conservationist and author of children's books, had moved to Coconut Grove in 1886. The publications of these men helped to educate the public about the glories of the Everglades and the threats to them.⁷⁵

⁷⁵ Leah La Plante, "The Sage of Biscayne Bay: Charles Torrey Simpson's Love Affair with South Florida," *Tequesta* 55 (1995):62, 65–69; Fishman, 240–44; David Fairchild to Ernest F. Coe, Oct. 15, 1949, ENP, CP, EVER 22418; Vance, "May Mann Jennings and Royal Palm State Park," 2.

The Feather and Skin Trade

From prehistoric times until well into the twentieth century, residents of South Florida relied on the area's wildlife for food and as a source of hides, furs, and feathers for apparel. In the colonial period, South Florida Indians began to sell products like turtles, furs and hides, and birds and their feathers to traders from Cuba. When whites and blacks began settling the area in the nineteenth century, they also hunted, both for their own needs and for the market. In the last quarter of the nineteenth century, a worldwide vogue for feathers, and even whole birds, on women's hats dramatically increased the market for South Florida's plume birds (figure 2-2, Lavish use of bird plumes in a hat).



Figure 2-2, Lavish use of bird plumes in a hat

The Everglades, where hundreds of thousands of birds established nests in rookeries every winter and spring, was a major source of the feathers and plumes demanded by the millinery trade. Among the most-sought species were white egrets, snowy egrets, flamingos, great white herons, and tri-colored herons, but almost any bird's feathers might appear on a hat. Especially prized were "aigrettes," the long plumes of the egret

that appeared only in the breeding season. Plume hunters often would kill all of the adults in a rookery and leave the young to starve to death. Ft. Myers was a center for the plume trade; each season buyers would send dozens of hunters into the Everglades and other areas of Florida. Residents at Flamingo and at scattered points elsewhere along the coast earned cash by selling plumes. Naturalists, ornithologists, and well-heeled collectors also shot birds and took their eggs. Wildlife photography was then in its infancy, and naturalists believed they had no good option other than shooting birds for their studies. Private collectors and taxidermists were sometimes able to get state authorities to issue collecting permits, supposedly reserved for scientific study only. A trade in alligator skins for luggage and purses and the pelts of small mammals, such as otters, muskrats, and raccoons, also arose.⁷⁶

The American Ornithological Union (AOU), founded in New York City in 1883, was the first organization to campaign against the killing of birds for their feathers. It formed a bird protection committee and developed a model law on bird protection that it urged each state to enact. The model law made a careful distinction between game birds, such as ducks, coots, and turkeys that were of interest to sportsmen, and nongame birds, which were to be completely protected. In 1896, Harriet Hemenway took the lead in forming the Massachusetts Audubon Society, the first state Audubon Society. Its mission was to end the use of feathers as ornaments and promote bird protection generally. By 1902, there were 31 state Audubon Societies, which for a time worked closely with the AOU to educate the public about the dangers to birds, discourage plumed hats, and push for the passage of laws to protect birds. In 1902, a National Committee of Audubon Societies formed to help coordinate the work of the state societies.⁷⁷

⁷⁶ Frank Graham Jr., *The Audubon Ark: A History of the National Audubon Society* (Austin: University of Texas Press, 1990), 24–26, 150.

⁷⁷ Graham, 7, 14–15; Oliver H. Orr Jr., *Saving American Birds: T. Gilbert Pearson and the Founding of the Audubon Movement* (Gainesville: University Press of Florida, 1992), 22–23, 50–51. George Bird Grinnell, publisher of the magazine *Forest and Stream*, had previously founded a national Audubon Society in the 1880s, but it was poorly organized and underfunded and soon disbanded.

Even when the AOU and a state Audubon Society were able to get a bird protection law passed, the state almost invariably failed to provide any enforcement mechanism. This was the case in Florida. The Florida Audubon Society, organized in 1900 at Maitland near Orlando, helped to pass a bird protection law the following year. It was entitled “An Act for the Protection of Birds and Their Nests and Eggs, and Prescribing a Penalty for any Violation Thereof.” The act provided penalties of five dollars and/or up to ten days in jail for each offense, but it said nothing about the law’s enforcement. As it had done in other states, the AOU and the National Committee of Audubon Societies arranged to hire and pay Florida wardens to be deputized by local authorities to enforce the new law. In 1902 and 1903, Audubon hired four wardens to patrol in Florida. Paul Kroegel was appointed to patrol the newly created Pelican Island National Wildlife Refuge on the Indian River, and Guy M. Bradley of Flamingo was appointed to patrol from Cape Sable to Key West to Key Largo (figure 2–3, Audubon Warden Guy Bradley).⁷⁸



Figure 2–3, Audubon Warden Guy Bradley

⁷⁸ Graham, 50; Lucy Worthington Blackman, *The Florida Audubon Society, 1900–1935* (N.p.: n.d. [1935?]), 1; National Association of Audubon Societies, “A Summary of Warden Work and Rookery Success in South Florida, 1902–1946,” typescript, EVER 55853, box 15.

Guy Bradley was 32, married, and the father of two when he was sworn in as a Monroe County warden and deputy sheriff in June 1902. He had lived at Flamingo since 1896, having worked as a boat captain and on land survey crews. Bradley had done some plume hunting himself as a young man but abandoned it as a cruel and illegal activity. He swore now to do his best to educate his neighbors and enforce the bird protection law. Some of Bradley's neighbors at Flamingo openly defied the law, shooting birds for food and to sell for their feathers. Like most any small, isolated community, Flamingo had some rough characters and some long-standing family feuds. Walter Smith, a tough Confederate veteran, was not on friendly terms with Guy Bradley and his father, Edwin R. Bradley. Twice, Guy Bradley arrested Walter Smith's teenaged son, Tom, for shooting birds. After the second incident Walter told Bradley he would kill him if he did it again.⁷⁹

On July 8, 1905, Bradley saw Smith's boat moored at Oyster Keys, about two miles from his home, and heard gunfire. He rowed a small boat out to Smith's boat, where he witnessed Tom Smith and his brother Danny shooting into the rookery on the keys and coming back with dead birds. Bradley told the father, Walter, that he was going to make an arrest. For what happened next, we have only Walter Smith's version. Smith claimed that Bradley fired at him with his revolver and that he shot back in self-defense. Smith sailed to Key West to turn himself in to the sheriff; Bradley's body was discovered drifting in his boat the next day. A Monroe County grand jury ultimately accepted Smith's claim of self-defense and refused to hand up an indictment. Whether or not Walter Smith took advantage of the confrontation to settle an old score, Guy Bradley died in the line of duty. The Audubon movement took up a collection for his widow and helped her to buy a house in Key West. It would not send another warden to the Everglades for twenty-five years.⁸⁰

Guy Bradley's death received extensive coverage in the national press and became a rallying point for the bird protection movement. Herbert K. Job, a Unitarian minister and ornithologist, published a piece entitled "Bird Protection's First Martyr" in *Collier's* magazine, a widely circulated weekly. In 1904, the National Committee of Audubon Societies had reorganized and incorporated as the National Association of Audubon Societies for the Protection of Wild Birds and Animals (NAAS). The addition of animals to the group's name and mission was a conscious attempt to broaden its base of support. The NAAS continued its efforts to end the plume trade. Some in the AOU believed that the push by the NAAS for legislation threatened scientific collecting of birds and eggs, and the AOU distanced itself from these efforts. The killing of Guy Bradley and two other bird wardens caused the NAAS to change its focus. Fearing for the lives of its wardens, the NAAS moved away from trying to protect all rookeries, devoting more

⁷⁹ Stuart B. McIver, *Death in the Everglades: The Murder of Guy Bradley, America's First Martyr to Environmentalism* (Gainesville: University Press of Florida, 2003), 144.

⁸⁰ McIver, 152–61; William Dutcher, President, NAAS, to Mrs. Bradley, Feb. 24, 1906, EVER 584.

energy to changing public opinion and passing legislation to ban the importation of feathers. In 1911, Audubon-supported legislation banning the sale of feathers in New York State from any source took effect. Because 90 percent of the nation's makers of ladies hats were in New York, this was an important victory. In the end, it was the change in fashion that robbed feathers of their chic that did the most to protect the plume birds. Nonetheless, the Guy Bradley story, amplified by the promotional efforts of the NAAS, certainly played a part in the campaign to save Florida's birds.⁸¹

The story of the plume trade is often presented as a simple morality play: greedy and callous Florida plume hunters versus noble bird protectors, many from out of state. The reality is considerably more complex. Many plume hunters were not year-round residents of South Florida but came seasonally to exploit the region's resources. All of the hunters were supplying a consumer market of middle- and upper-class families far to the north. Both the end consumers and opponents of the plume trade chiefly were residents of cities and towns outside of Florida, and largely outside of the South. It is safe to conclude that none of these opponents ever had to make a living on the semifrontier of South Florida. Selling plumes was one of the few sources of cash income for South Florida residents. In addition, a number of the ornithologists and bird protectors who protested against the plume trade had no qualms about shooting birds for their study collections or as hunters.

Royal Palm State Park

At almost 400 acres, Paradise Key or Royal Palm Hammock is one of the largest of the Everglades keys. The key lies just west of Taylor Slough. Royal palms as tall as 100 feet towered over the hardwood forest there, making the key visible for miles. Indians and local whites had established camps for hunting, trapping, and moonshine making on the key for decades before it was known to outsiders. Seminoles brought writer Kirk Munroe to the key in 1882, and a local hunter, Ed Brewer, named it Paradise Key. Areas adjacent to the key were farmed and contained seasonal camps for agricultural workers. These camps attracted prostitutes, and some have maintained that the name Dead Pecker Slough, applied locally to Taylor Slough, derived from the unfortunate consequences of consorting with the prostitutes. A more prosaic but probable explanation came from retired Everglades Ranger Fred Dayhoff. After a number of conversations between Dayhoff and Gladesman Glen Simmons, the two concluded that the most likely source was the dead cypress trees that decades ago attracted woodpeckers to the slough. The trees were "dead peckerwood" and so the slough became Dead Pecker Slough.⁸²

⁸¹ Orr, 206–11; McIver, 161–62, 166; Graham, 76.

⁸² Tebeau, 167–68; Fred Dayhoff, personal communication, Oct. 13, 2014. Another colorful derivation for Dead Pecker Slough was supplied by *Liguus* snail collector Archie Jones, who told Park Curator Nancy Russell that it came from the effects of cold water on men wading in the slough.

Hunting, trapping, and moonshine distilling continued on Paradise Key well into the 1930s and perhaps longer. Anthropologist Laura Ogden has shown how Paradise Key was “discovered” by outsiders and defined as a unique tropical outlier in the continental United States by naturalists. In this process, the longstanding familiarity of local residents with the hammock was generally obscured. Of most importance to this history of Everglades National Park is that the work of naturalists, such as John Kunkel Small and Dr. William E. Safford who raised the profile of Royal Palm Hammock among scientists and others. Safford’s field work documented more than 241 plant varieties, including palms, orchids, ferns, and vines, on the hammock. By the 1900s, these naturalists and some Florida citizens were seeking ways to protect the hammock and its unique vegetation.⁸³

Role of the Florida Federation of Women’s Clubs

The Florida Federation of Women’s Clubs (FFWC), organized in 1895 at Green Cove Springs, took on the preservation of Royal Palm Hammock as a special mission. Two Miami-area clubwomen, Edith (Mrs. John) Gifford and Mary (Mrs. Kirk) Munroe, had been tireless in urging protection for the hammock. The area had not been adequately surveyed, however, which complicated matters. As described in Chapter 1, county and state authorities decided to build a rolled-surface road from Homestead to Flamingo, which was planned to go through the hammock. Immediate steps were needed to protect the area. May Mann Jennings, a dynamic Jacksonville clubwoman and the wife of former governor William S. Jennings, became president of the FFWC in November 1914 (figure 2–4 May Mann Jennings). She vowed to get Royal Palm Hammock established as Florida’s first state park. Jennings knew that Henry Flagler’s widow, Mary Lily Kenan Flagler, was willing to donate 960 nearby acres, which could be exchanged with the state for a similar plot adjacent to the hammock. This adjacent tract lacked hammock vegetation and could be leased to farmers as a source of operating income for the park. Jennings set about lobbying Governor Park Trammell and the legislature to donate 960 acres of state-owned land embracing the hammock and provide an annual appropriation. Jennings was very well-connected to Florida politicians and business owners, and she worked all of those connections. Exhausted from overwork, May Mann Jennings missed the final days of the 1915 legislative session. Her husband, the former governor, went to Tallahassee, where he got the law passed minutes before the legislature adjourned on June 2, 1915 (figure 2–5, Passage of the Royal Palm Park bill). The law granted the 960 acres to the federation, gave it full responsibility for developing and maintaining the park, but it provided no

⁸³ Laura Ogden, “Searching for Paradise in the Florida Everglades,” *Cultural Geographies* 15 (2008):211–21; Tebeau, 167–68.

appropriation. In November 1915, the Board of Trustees of the IIF approved the land exchange with Flagler, making the park 1,920 acres in all.⁸⁴



Figure 2-4 May Mann Jennings

Pleased to have gotten the park, May Jennings moved on to the construction of a lodge for scientists and other visitors, landscaping the grounds, hiring a warden, and raising the funds to pay for all of it. She solicited contributions from Andrew Carnegie, John D. Rockefeller, Charles Deering, Mrs. Potter Palmer, and Mrs. Thomas Edison. Mrs. Edison gave fifty dollars; there is no record that the others responded. The FFWC launched a “Mile of Dimes” campaign, asking member clubs to circulate one-foot-long folders, each holding a dozen dimes. If all the slots had been filled, \$6,000 would have been raised, but only about \$727 actually came in. Jennings got Dade County to contribute \$1,000 for park development, but the federation ended up having to borrow \$3,500 to complete the lodge and outbuildings that were needed.⁸⁵

⁸⁴ Lucy Worthington Blackman, *The Florida Federation of Women's Clubs, 1895–1939* (Jacksonville: Southern Historical Publishing, 1940), 5, 34; Vance, “May Mann Jennings and Royal Palm State Park,” 5, 8–11; Chapter 6949, [Florida] Acts of 1915; Governor Park Trammell to May Mann Jennings, Nov. 13, 1915, MMJ papers, box 8. Vance’s article gives a good account of the lobbying campaign to get the park established and the park’s 1916 dedication; it is less reliable for the later history of the park.

⁸⁵ May Mann Jennings to Mrs. Potter Palmer, November 2, 1915; Royal Palm Committee of Florida Federation of Women’s Clubs Meeting Minutes, Dec. 22, 1915; May Mann Jennings to Mrs. Gifford, July 31, 1916, MMJ papers; Vance, “May Mann Jennings and Royal Palm State Park,” 12.

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Figure 2–5, Passage of the Royal Palm Park bill

May Mann Jennings involved herself in every detail of the park’s development, the lodge building in particular. She thought that a lodge with concrete walls and a tile roof would be most durable, but she had to settle for a wood frame building to stay within budget. Among Jennings’s papers is a June 1916 elevation drawing labeled “Sketch for Lodge, Royal Palm State Park” signed by W. C. DeGarmo. The elevation shows a substantial, symmetrical Spanish Revival Style stuccoed building with projecting rafter ends and a red pantile roof. Walter C. DeGarmo, said to be the first registered architect in Florida, was a Miami architect specializing in revival styles. The FFWC ended up without enough funds for such an elaborate building. Jennings wrote later that a draftsman by the name of E. L. Bryant, possibly of DeGarmo’s office, prepared drawings and specifications for a wood-framed and -sided lodge building based on her pencil sketch.⁸⁶

The FFWC’s annual meeting was scheduled to be held in Miami in November 1916, and the park’s formal dedication was scheduled to coincide with the meeting. Although the clubwomen pressed the county to quickly finish the road from Homestead to Royal Palm Hammock, there were delays. Problems with the road prevented delivery of building

⁸⁶ W. C. DeGarmo, Sketch for Lodge, Royal Palm State Park, June 26, 1916; May Mann Jennings to Mrs. F. C. Loveland, July 6, 1916, MMJ papers, boxes 10, 23A; Nicholas N. Patricios, *Building Marvelous Miami* (Gainesville: University Press of Florida, 1994), 136. DeGarmo designed a number of commercial and public buildings in Coral Gables in the 1910s and 1920s.

materials, and the lodge was not completed in time for the dedication. On November 23, 1916, a motorcade of 168 cars brought clubwomen and guests from Miami to the dedication; overall more than 1,000 people heard talks from James Ingraham, Mrs. John D. Sherman of the General Federation of Women's Clubs, and Dr. Charles Simpson. Jennings had invited E. A. McIlhenny of the McIlhenny Company, world famous as the maker of Tabasco Sauce, to give an address. McIlhenny had established an egret rookery on a portion of his family's property at Avery Island, Louisiana, and he supplied breeding pairs for release in Florida. He was, however, unable to attend the dedication. S. A. Belcher, chairman of the Dade County Commissioners, was on hand to formally dedicate the Ingraham Highway. The Homestead Woman's Club oversaw the preparation and serving of a picnic lunch for all the guests (figure 2-6, Luncheon at dedication of Royal Palm Park).⁸⁷



Figure 2-6, Luncheon at dedication of Royal Palm Park

Construction of the lodge, a garage, a water tank, and a plant propagation house went forward after the dedication. As the chair of the park committee, Agnes Stewart (Mrs. E. C.) Loveland, wrote in June 1917:

The isolated locality of the Park, combined with the need to always economize and the fact that laborers are not plentiful has made it imperative for us to go slow, altho [*sic*] as reported at last meeting the long delay in getting wall board was our greatest annoyance. However the buildings are now nearing completion and judging from the things visitors say about the place, results will be satisfactory.

In the meantime, the FFWC hired Charles Mosier as warden/caretaker for the park at \$100 a month. The federation received \$1,200 from Dade County for his first year's salary. Mosier had previously been responsible for supervising the landscape work at

⁸⁷ "Road to Be Built to the Royal Palm State Park in Cape Sable," *Miami Metropolis*, Oct. 18, 1915; Dedication of Royal Palm State Park and Ingraham Highway, May Mann Jennings to Mrs. Gifford, July 31, 1916; "Reasons for Appropriation," n.d., May Mann Jennings, President's Report, Nov. 1916, E. A. McIlhenny to May Mann Jennings, Nov. 13, 1916, MMJ papers, boxes 10, 11, 20; Graham., 80-81.

Charles Deering's Viscaya Estate on Biscayne Bay in Miami. Mosier, his wife, and a daughter moved to the park in March 1916, living for more than a year in a canvas tent and cooking their meals over a campfire. Mosier immediately began laying out trails on the hammock and doing other landscape work. As construction of the lodge progressed, Mosier did all the painting and staining to save the cost of hiring painters.⁸⁸

J. F. Umphrey of Homestead was contractor for the lodge and outbuildings (figure 2-7 lodge at Royal Palm State Park). Jennings opted to economize by not having an architect supervise the construction, leaving that to Mosier and the FFWC's park committee. The lodge, a garage, and a water tower with an enclosed room below were completed before the winter of 1917/18, and a plant shed was added a short time later. About five miles of paths also were laid out. Mosier estimated that 6,350 people visited from December 17, 1917, through May 18, 1918. To provide revenues to support operations, the park sold royal palms and other plants cultivated in an on-site nursery. Mrs. Mosier acted as hostess for guests.⁸⁹



Figure 2-7 lodge at Royal Palm State Park

⁸⁸ "County to Help Upkeep of State Park Regularly," *Miami Metropolis*, Oct. 2, 1917; May Mann Jennings to Mrs. J. C. Wright, June 14, 1915, MMJ papers, boxes 6, 11; Vance, "May Mann Jennings and Royal Palm State Park," 14-15. Quotation is from Mrs. E. C. Loveland to May Mann Jennings and Board Members, June 12, 1917, MMJ papers.

⁸⁹ May Mann Jennings to Mrs. John Gifford, July 31, 1916, Chair, Royal Palm State Park Committee to Club Women, September 1917, Report of Royal Palm State Park Committee, June 18, 1918, MMJ papers, boxes 10, 12, 13.

As completed, the lodge at Royal Palm State Park was a thirty-two-foot-by-forty-two-foot, eight-room, two-and-one-half-story, front-gabled building of cypress and pine with screened porches on two sides. The exterior sheathing was 10-inch rough-surfaced horizontal boards stained brown, with a roof of composition shingles. The interior had wood floors, with walls of cream-colored wallboard framed by vertical wooden strips stained green. A fireplace of rough-faced Dade County limestone graced the living room. The lodge had hot and cold running water and electric lighting supplied by an on-site generator. The FFWC furnished the lodge in a rustic fashion, in a style that today is called Arts & Crafts. The living room furniture was ordered from the Old Hickory Furniture Company, which specialized in rustic designs featuring peeled log structural members and woven cane seats (figure 2–8, Lodge interior, Royal Palm State Park). Clubwomen contributed much of the labor for the lodge’s rugs and linens. The Longview Women’s Club either made or gathered the materials for seven woven rag rugs. Jennings and the women of the Springfield Improvement Association hemmed bed and table linens and towels⁹⁰



Figure 2–8, Lodge interior, Royal Palm State Park

The sixteen-foot-by-thirty-foot garage used materials similar to the lodge and held three automobiles. A water tower supported a 12,000-gallon tank. At the base of the tower was a twelve-foot-by-twelve-foot engine house, with galvanized steel walls and a pyramidal roof. This structure housed the engine for the water pump, a Delco generator for the lighting system, a workbench, and tool cabinet. The twenty-foot-by-thirty-foot plant propagation building had open latticework walls and roof. A water well equipped with a five-inch pipe as well as a septic system with concrete walls and lid served the complex.⁹¹

⁹⁰ Royal Palm State Park Lodge— Explanation of Plans Preparatory to Making Up Specification, Mrs. E. C. Loveland to May Mann Jennings, Report of Royal Palm State Park Committee, Nov. 23, 1916 to Nov. 23, 1917, MMJ papers, boxes 10, 11, 12; Florida State Park Committee Complains of Road Conditions,” *Miami Metropolis*, Jan. 5, 1917.

⁹¹ Mrs. E. C. Loveland to May Mann Jennings, MMJ papers, box 11.

May Mann Jennings asked the 1921 session of the legislature to add 12,000 acres of state land to the park, but it agreed to only an additional 2,080 acres. This brought the size of Royal Palm State Park to 4,000 acres. The legislators for the first time approved an annual appropriation for the park's operation, in the amount of \$2,500. By May 1925, W. D. Wheelock was the park warden. In 1930, the warden was making \$1,500 a year, his wife, the hostess, \$300 a year, and a helper \$350 a year plus board. By the late 1930s, Mr. and Mrs. E. E. Atkinson were warden and hostess. The September 1926 hurricane took off part of the roof of the lodge, damaged outbuildings, and largely destroyed the plant nursery. In 1927, a wildfire burned about 50 acres of luxurious growth at the north end of the hammock. A quick response from the Homestead, Miami, and Coral Gables fire departments prevented more extensive fire damage. The FFWC asked the 1927 legislature for \$20,000 for rehabilitation, but they received only \$10,000. About half of the appropriation was used for brush clearing. Facing falling tax revenues after Florida's real estate bubble burst, the legislature omitted to make the regular appropriations of \$2,500 for 1927, 1928, and 1929. In June 1930, the Bank of Biscayne failed, wiping out the FFWC's accounts, but not its endowment, which was invested in government bonds. The early years of the Great Depression were hard on the federation, and Jennings appealed to all Florida clubwomen for emergency donations for the park in June 1930.⁹²

The Civilian Conservation Corps at Royal Palm State Park

Substantial improvements were made to Royal Palm State Park under the New Deal's Emergency Conservation Work program, better known as the Civilian Conservation Corps (CCC). President Franklin D. Roosevelt had a long-standing commitment to conservation and land reclamation. One of his first initiatives after being sworn in as president in March 1933 was to establish the CCC. The program was designed to put unemployed single young men to work on needed conservation projects across the country. One major focus of the CCC was the development of state and municipal parks, and the NPS had responsibility for supervising this work. As of 1933, Royal Palm was Florida's only state park, and the state was in a position to substantially benefit from the CCC. May Mann Jennings, Miami landscape architect Ernest Coe, and others in Florida jumped at the chance to get some work done at Royal Palm. Jennings was the prime mover in this regard. As described below in Chapter 3, Coe had coordinated closely with top NPS officials beginning in 1928 in his campaign to establish a national park, and he worked these relationships to help secure a CCC camp for Royal Palm. The efforts were

⁹² "Royal Palm State Park: Emergency Appropriation of \$20,000.00 Badly Needed," n.d. [1927], May Mann Jennings, 1930 Report on Royal Palm State Park, MMJ papers, box 23; Mrs. W. S. Jennings to Clubwomen, June 14, 1920, NARA II, CCF, box 234; May Mann Jennings address to Southern Shade Tree Conference, Feb. 23, 1939, ENP, EVER 22965, box 1.

successful, and CCC Company 262, Camp SP-1, was established in Homestead in October 1933, with landscape architect William L. Phillips as camp superintendent.⁹³

In 1933, William Lyman Phillips (1885–1966) was Florida field representative for the prestigious Olmsted Brothers firm and also undertook commissions on his own. Phillips had trained at Harvard and learned much about tropical vegetation while laying out the town of Balboa, the administrative center of the U.S. Panama Canal Zone, in the 1910s. Among his designs in Florida were the grounds of the Bok Tower in Lake Wales. Private work was hard to come by during the Great Depression, and Phillips was relieved to be hired as a CCC project supervisor at a salary of \$220 a month. Although he lived in West Palm Beach, Phillips became responsible for CCC work in Dade County and had advisory duties in Monroe and Highland Counties. Following the Royal Palm Park project, he took over from Prentiss French as supervisor of the CCC work at Greynolds Park in North Miami Beach. He also supervised the CCC work at Highlands Hammocks State Park in Sebring. In 1935, Phillips began work on Matheson Hammock Park in Coral Gables and the adjoining Fairchild Tropical Garden, which is considered his masterpiece (figure 2–9, Limestone wall at Matheson Hammock Park).⁹⁴



Figure 2–9, Limestone wall at Matheson Hammock Park

⁹³ May Mann Jennings to Governor David Sholtz, Oct. 28, 1933, MMJ papers, box 19; Everglades National Park Association press release, Dec. 28, 1933, Gov. Sholtz papers, box 40.

⁹⁴ Faith Reyner Jackson, *Pioneer of Tropical Landscape Design: William Lyman Phillips in Florida* (Gainesville: University Press of Florida, 1997), xv, 68, 122–28, 140, 147, 155–58, 179–82. The CCC program represented a substantial expansion of the NPS mission. From 1933 to 1942, the NPS employed hundreds of out-of-work landscape architects on state park projects across the country. Florida in fact had no state park program prior to the CCC era.

The men of Camp SP-1 were based at a location on South Krome Avenue in Homestead and commuted daily to Royal Palm.⁹⁵ Full strength for a CCC camp was 200 men; Camp SP-1 probably rarely operated at full strength. Almost all the enrollees were unskilled, and Phillips quickly decided he would need to train them on-site in the rudiments of surveying and other tasks (figure 2–10, CCC men sawing limestone at Royal Palm State Park, March 1934). Phillips described his approach in these words:

The hammock on the portions of Paradise Key shown on this plan was burned in 1927, excepting a small section adjacent to the Lodge. Amidst the woody remains of the original hammock a new growth is coming in, largely of shrubs—marlberry, wild coffee, velvet seed, wax myrtle, groundsel tree, sumac—and *Trema floridana*, a fire-weed tree. Of the high forest trees the wild tamarind is abundant, also the pigeon plum and the wild fig, but most of the other tall hammock trees are rare or lacking, notably the royal palms.

The plan is to clear the area of the fireweeds, *Trema* and sumac, and of unsightly obstructive debris; to plant abundantly the royal palm; and to add such others of the native trees as will tend to restore the richly varied hammock growth.

In order to establish identifiable locations in this shrubby wilderness, and to give motives for planting and ways of access, the area is to be divided into irregular lanes and islands. The lanes are to be only more openly cleared than the islands; they cannot be kept as grassy glades and are not to be so thought of. They may eventually become filled with shrub growths and volunteer trees but it is anticipated that vistas, more or less boldly defined, will persist.

The plan, in respect to planting, is largely diagrammatic. Clearings will be made, trees will actually be planted as the existing growths offer opportunities and justification, in accordance with the spirit of the plan rather than literally.⁹⁶

⁹⁵ “Camp to Stay in Homestead, Plan Provides,” *Miami Daily News*, Sept. 15, 1933.

⁹⁶ Jackson, 130.



Figure 2–10, CCC men sawing limestone at Royal Palm State Park, March 1934

It is clear from this description that Phillips did not intend to allow natural processes to take their course. Instead, he aimed to arrive more speedily at a mature hammock forest by removing unwanted plants and transplanting royal palms. Phillips and the Florida Federation of Women’s Clubs did not want visitors to have to wait too long for a pleasing display of dramatic tropical vegetation. Phillips consulted with Dr. David Fairchild on the landscape work to be done at Royal Palm. Ernest Coe gave a lecture to the men of the CCC camp, but there is no evidence that Phillips relied on Coe’s advice in his planning.⁹⁷

The men of Company 262 began by clearing brush and cutting the lanes mentioned above. They soon moved on to improving the trail system with rock borders and crushed rock surfacing. Other work included installing a concrete-lined lily pond, building some open-sided, chickee-style observation shelters with thatched palm roofs, planting trees, erecting a wooden fire lookout tower, running twelve miles of telephone line from the park to Florida City, and making repairs to the lodge.⁹⁸ The CCC men devoted much time to carefully removing royal palms from various locations in the Miami area and transporting them to the park. Construction on a new garage to replace the 1917 frame structure began in February 1934. The garage, an equipment house, and a small pump house/deer feeding station were faced with rough-surfaced oolitic limestone rock

⁹⁷ William L. Phillips to Dr. David Fairchild, Nov. 30, 1933, in Jackson, citing Phillips papers, box 10, folder 3; Everglades National Park Association press release, Dec. 28, 1933, Gov. Sholtz papers, box 40.

⁹⁸ A chickee is an open-sided structure of upright poles with a thatched palm roof. Chickees were extensively used by Native Americans and later adopted by white settlers.

(figure 2–11, Deer pen and feeding station at Royal Palm State Park, July 1934). The garage was fifty-two feet by twenty-two feet, with three bays and a store room. The deer feeding station (extant at this writing) was nine feet by nine feet with a gable roof and tiles at the gable edges. Deer were kept in a fenced enclosure to protect them from predators, and park visitors were invited to feed them. The CCC men also served as guides for park visitors. Building the lily pond and planting the larger trees required excavating or blasting the limestone rock of the hammock (figure 2–12, Lily pond at Royal Palm State Park, July 1934). With the work at Royal Palm winding down in June 1934, camp 262 was transferred to work on Highland Hammocks State Park at Sebring. From time to time in 1935, Phillips dispatched CCC men from the Greynolds camp to finish up some minor tasks at Royal Palm.⁹⁹ Camp Superintendent Phillips summarized the accomplishments of the CCC at Royal Palm as follows:

The major results of the operations at Royal Palm appear as (a) a general improvement in the ease and comfort of visitation, and a more impressive exhibition of natural features and landscape qualities; (b) a greatly enhanced orderliness and attractiveness of grounds about the Lodge, particularly on the west side; and (c) a set of vastly better, more adequate, convenient and durable service buildings located in a properly secluded service area. The effects of the planting, though little evident now, should become impressive as time goes on.¹⁰⁰



Figure 2–11, Deer pen and feeding station at Royal Palm State Park, July 1934

⁹⁹ Narrative Reports, Royal Palm State Park, Dec. 1933, Feb. 1934, June 1934, NARA II, RG 79, Reports of CCC Projects in State and Local Parks, box 15; Report on Royal Palm State Park, March 20, 1934, MMJ Papers, box 19; “Trained Guides at Service of Visitors as C.C.C. Work of Landscaping Progresses,” *Homestead Enterprise*, Feb. 16, 1934; Jackson, 136–137. The CCC was a great spur to state park development in Florida; the legislature established the Florida Park System in 1935 (Chapter 17025, Laws of Florida).

¹⁰⁰ Narrative Report, Royal Palm State Park, June 1934, NARA II, RG 79, Reports of CCC Projects in State and Local Parks, box 15.



Figure 2–12, Lily pond at Royal Palm State Park, July 1934

The Fate of Royal Palm Lodge

Soon after opening a new ranger station/visitor contact building at Royal Palm Hammock in late 1951, the NPS decided it had no use for the lodge building (see Chapter 7). The park's first superintendent, Daniel B. "Dan" Beard, found the structure poorly located, in bad repair, unsightly, and a fire hazard. The service sold the lodge building to Donald and Jeannette Sullivan, who had been the last caretakers of the state park, serving from 1941 to 1947. They sold the building to Donald's brother, Jack Sullivan. The park did not retain any of the furnishings or other items used in the lodge. The building was moved in two pieces to 106 N.E. Third Street in Homestead and reassembled on a new foundation. It stood there until 1992, when Hurricane Andrew damaged it beyond any hope of repair or restoration. In 1959, the NPS demolished the plant propagation building and the CCC-era garage at Royal Palm. The deer feeding station remains as the last building from the state park. A number of landscape features are still recognizable.¹⁰¹

For 30 years, the FFWC owned, operated, and maintained Royal Palm State Park, with only a meager appropriation from the state, amounting to \$2,500 per year when it was actually paid. The clubwomen supplemented this by leasing several hundred acres to

¹⁰¹ *South Dade News Leader*, Nov. 9, 1990; Supt. Beard to RDR1, July 28, 1952, NARA Ph, RG 79, 79–62-A-305, box 52.

tomato growers, which might bring in \$800 in a good year, selling Royal Palms and other plants from the park's nursery, and the income from supplying rooms and meals at the lodge. There was no charge for visiting the grounds or picnicking. Naturalists and students made hundreds of visits to the lodge, which made an ideal base camp for field work in the Everglades. The FFWC wanted to make the hammock's wonders accessible to visitors but vowed to keep the area "as nearly as possible in its natural state."¹⁰² This goal was interpreted differently in the 1920s and 1930s than it would be today. Under the FFWC's management, holes were blasted into the limestone substrate for transplanted palm trees, rare plants were transplanted from other hammocks to Royal Palm State Park, and exotics were propagated for sale. It is perhaps fortunate that the clubwomen operated on a shoestring budget. Had their funds been greater, the road from Homestead to Royal Palm Hammock might well have ended up lined with transplanted Royal Palms, a plan actively urged by the FFWC.¹⁰³ As described below in Chapter 5, the FFWC turned over Royal Palm State Park to be part of Everglades National Park in 1947. In April 1948, a bronze plaque commemorating the efforts of the FFWC was unveiled at Royal Palm. Superintendent Beard wrote Jennings a few months before the National Park Service took over Royal Palm in praise of the FFWC's work. He called the establishment of the state park "a good deed in a then very naughty world."¹⁰⁴

¹⁰² Mrs. W. S. Jennings, "Historical Sketch of Royal Palm State Park," *Homestead Enterprise*, n.d. [Nov. 1917], EVER 42054.

¹⁰³ In late 1916, the Florida Federation of Women's Clubs asked Dade County to plant Royal Palms along with bush allamander, yellow lantana, yellow alder, yellow Jessamine, and trumpet flower along the highway. "Ingraham Highway," *Homestead Enterprise*, Nov. 23, 1916.

¹⁰⁴ The plaque was at first mounted on a boulder and at this writing is affixed to the wall of the Royal Palm Visitor Center. SMR, Apr. 1948; Daniel B. Beard to Mrs. W. S. Jennings, May 25, 1947, NARA II, RG 79, NPS AF, box 901.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 3:
The Movement for a National Park in the Everglades

Chapter 3: The Movement for a National Park in the Everglades

Early Suggestions

Despite May Mann Jennings's view from early on that Royal Palm State Park could provide the nucleus of a future national park, the first published suggestion that the Everglades had the makings of a national park most likely appeared in a 1905 article in *Century Magazine*.¹⁰⁵ A sixteen-page piece by Edwin Asa Dix and John Nowry MacGonigle entitled "The Everglades of Florida: A Region of Mystery" appeared in the magazine's February 1905 issue. Although the authors believed a portion of the region might be drained for agriculture, they also observed:

[T]here are other points of view than the practical. The mystery of the Glades creates a fascination. . . . The mystery is part of our national inheritance. . . . It has its place among the country's native wonders, like the Mammoth Cave and Niagara Falls, the Yellowstone and Yosemite and the Grand Cañon of the Colorado, the Great Natural Bridge of Virginia and the newly discovered natural bridges of Utah. After all, it is rather a good thing to have a little of Wonderland left.¹⁰⁶

Dix and MacGonigle did not actually state that the Everglades ought to be a national park, but they strongly implied it by comparing the area to existing parks, such as Yellowstone and Yosemite.

A few years later, authors Anthony Weston Dimock and Julian Anthony Dimock made a similar argument by analogy. Presciently foreseeing future tourist development in the area, they wrote in 1908:

The network of rivers, chains of lakes, beautiful Everglades and ten times Ten Thousand Islands of Southern Florida, will be all-the-year playgrounds of the coming generation. Their most conspicuous charm, which has departed, might be restored if the birds of Florida could secure the same protection as the beasts of Yellowstone National Park.¹⁰⁷

At about the same time, late in Theodore Roosevelt's second administration, U.S. Chief Forester Gifford Pinchot suggested that Royal Palm Hammock (then more commonly known as Paradise Key) might be made a national monument. Under the Antiquities Act

¹⁰⁵ May Mann Jennings, Report of Royal Palm State Park, July 1939, "Attention is Invited to What Eminent Scientists Say Concerning the Park," n.d., MMJ papers, box 10, 23.

¹⁰⁶ Dix and MacGonigle, 512–27.

¹⁰⁷ Anthony Weston Dimock and Julian Anthony Dimock, *Florida Enchantments* (New York: Outing Pub. 1908), 210–11.

of 1906, the president had the authority to establish a monument on land donated to the federal government. The lack of adequate surveys in the area and the confusion over ownership of the hammock prevented any action on Pinchot's proposal. In 1916, Dr. David Fairchild, agricultural explorer with the Bureau of Plant Industry, USDA, repeated the suggestion that Paradise Key be made a national monument.

By the 1920s, the idea of a national park in the Everglades had appeal for a number of people. Robert Sterling Yard, executive secretary of the National Parks Association, later recalled that he had made the suggestion early in that decade. In the Miami area, a group of naturalists began having informal meetings in 1922. Among them were botanist Dr. David M. Fairchild, ornithologist Dr. Harold H. Bailey, botanist and mollusk expert Charles Torrey Simpson, and forester John Gifford. The group eventually organized as the Florida Society of Natural History. According to historian Charlton Tebeau, these men began discussing the idea of a national park in the Everglades in 1923. The secretary of the interior's annual report for 1923 stated that "an untouched example of the Everglades of Florida" should be established as a national park. In his 1925 work *The Birds of Florida*, Dr. Harold H. Bailey wrote "a large reservation in the 'glades,' such as the 'Big Cypress' and Lake Okeechobee, should be set aside for them [wildlife] as a State or National park."¹⁰⁸

At least one anthropologist believed that the prehistoric Native American sites in the Everglades also deserved federal protection. In 1918, noted physical anthropologist Aleš Hrdlička made a four-week reconnaissance of the shell works on the Gulf Coast of Florida from Ft. Myers south to Cape Sable. In a 1922 book, *The Anthropology of Florida*, he wrote that a group of mounds south of the mouth of the Whitney River and the complex of sites on Turner River ought to be made "national reservations."¹⁰⁹ Business tycoon Barron Collier, who purchased a million acres in Southwest Florida in the 1910s, also believed a portion of the area should be made a national park. As early as 1923, when Collier was president of the Tamiami Trail Association, he floated the idea of a Tamiami Trail National Park. In 1926 and again in February 1928, at Collier's urging, Senator Park Trammell introduced a bill calling for the NPS to make an evaluation. The bills did not identify a specific area in South Florida to be investigated and therefore did not receive consideration.¹¹⁰

¹⁰⁸ Robert Sterling Yard to SOI Wilbur, January 21, 1931, NARA II, RG 79, NPS CCF, box 230; Tebeau, 174–75; *Annual Report of the Secretary of the Interior for the Fiscal Year Ended June 30, 1923* (Washington, DC: GPO, 1923), 81.

¹⁰⁹ Aleš Hrdlička, *The Anthropology of Florida* (Deland, FL: Florida State Historical Society, 1922), 2–3, 14, 30, 39.

¹¹⁰ "Chronology, Everglades National Park—Florida," n.d., EVER 22965; Ernest F. Coe to Ben H. Thompson, NPS, Feb. 2, 1937, Gov. Cone papers, box 30.

Ernest F. Coe and the Everglades National Park Association

It was not until Ernest F. Coe arrived in Florida that an organized campaign for a national park in the Everglades emerged (figure 3–1, Ernest F. Coe, ca. 1930s). Coe was born in New Haven, Connecticut, on March 21, 1867, the second son of Edward and Louisa Bonney Coe. Edward was a Civil War veteran and for a time held the position of collector or deputy collector of customs of the port of New Haven.¹¹¹ Ernest Coe took courses in the Fine Arts Department at Yale University from 1885 to 1887 although he never received a degree. He developed a successful practice as a landscape architect in New England and for many years owned and operated the Elm City Nursery in New Haven. Coe seems never to have had any formal training in landscape architecture. He later said that he had learned much about landscape design during trips to Europe and Japan. During a 1911 trip to Japan, he studied the ancient art of bonsai, the cultivation of dwarf trees. Coe brought a number of bonsai specimens back from Japan and published an important article on bonsai in a 1923 issue of *Garden Magazine*. Next to nothing is known about Coe’s landscape practice in New England. In an obituary published in *Landscape Architecture* in 1951, Florida landscape architect William Lyman Phillips noted that he was recognized for “his bent for informal and naturalistic design.”¹¹²

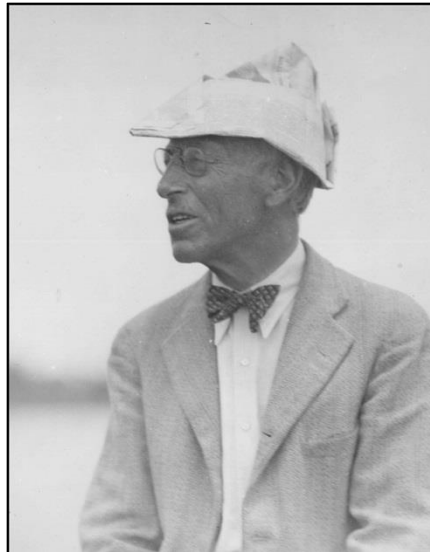


Figure 3–1, Ernest F. Coe, ca. 1930s

¹¹¹ The collector of a port and his deputies were responsible for taking in custom duties on articles imported into the U.S.

¹¹² 1870, 1880, 1910, 1920 U.S. Census, accessed at Ancestry.com; Yale University, *Directory of the Living Non-Graduates of Yale University* (New Haven: Tuttle, Morehouse & Taylor, 1910), 97; W[illiam] L[yman] P[hillips], “Ernest Francis Coe,” *Landscape Architecture*, July 1951; “Everglades, New U.S. Park, Tribute to New Haven Man,” *New Haven Register*, Nov. 30, 1947. The *Register* article states that, as early as 1910, Ernest Coe established a nursery in South Florida to supply his New Haven business, but this cannot be independently confirmed. For Coe’s work with bonsai, see E. F. Coe, “Keeping Japanese Picture-Plants Alive,” *Garden Magazine* 37 (1923):331–332.

In 1925, Coe and his wife Anna moved to the Miami area with two nieces and a nephew, purchasing a large house at 3648 Matheson in Coconut Grove. Sometime after 1930 when the nieces and nephew had moved on, they bought a smaller house at 4131 El Prado Avenue in Coconut Grove. In relocating to Miami, Coe had hoped to design the grounds of the estate homes that some wealthy northerners were erecting in Florida, but his timing was abysmal. The overheated Florida real estate market peaked in 1925 and was in the doldrums for years thereafter. Coe maintained an office at 2311 Ponce de Leon Boulevard in Coral Gables for a few years, but he had closed it by summer 1931. There is no record of his having undertaken any private landscape design commissions in Florida although he did give lectures on tropical plant materials.¹¹³

Once in Florida, Ernest Coe soon met the members of the Florida Society of Natural History, including Dr. David Fairchild and Dr. Harold H. Bailey, and learned about the natural wonders of the Everglades. By all accounts, he was captivated by what he saw and heard and decided to work for the creation of a national park in the Everglades. Coe made many trips into the region, drawing maps and working out tentative boundaries for a park that would include all of the important natural environments of the area, including not just the Everglades Basin, but mangrove forests along the coast, a portion of the Big Cypress Swamp, and the coral reefs of Key Largo (figure 3–2, Everglades National Park Association postcard with proposed park boundary). One of the many people that Coe consulted was landscape architect William Lyman Phillips, based in West Palm Beach (see Chapter 1). By spring 1928, Coe believed that he had his proposal for a national park in shape, and he wrote to NPS Director Stephen Mather on May 18, 1928. Coe stressed that the Everglades “would make, in my opinion, one of the finest National Parks in the United States, and I believe would eventually within a very short time become one of the most popular of our national parks.” Coe was already well organized for his campaign, arranging to have at least two dozen scientists and Florida leaders send letters of support to Mather at the same time. These supporters included Charles Torrey Simpson; Dr. Harold H. Bailey; Frank Stoneman, editor of the *Miami Herald*; B. F. Ashe, president of the University of Miami; R. B. Burdine of Burdines Department Store; and a representative of Carl Fisher Properties.¹¹⁴

Coe and his wife spent their summers at a family vacation home in Wakefield, Rhode Island.¹¹⁵ On their way north in 1928, they stopped in Washington, DC and Coe had a

¹¹³ Marjory Stoneman Douglas, “The Forgotten Man Who Saved the Everglades,” *Audubon* (September 1971); W[illiam] L[yman] P[hillips], “Ernest Francis Coe”; 1930 U.S. Census, accessed at Ancestry.com.

¹¹⁴ Jackson, 83; Ernest F. Coe to Stephen D. Mather, May 18, 1928, Ernest F. Coe to Dear Friend, June 5, 1928, NARA II, RG 79, NPS CCF, box 230. Carl G. Fisher (1874–1939) made a fortune in the manufacture of automobile parts and in the 1920s was the major force in developing Miami Beach as a resort destination.

¹¹⁵ A Sept. 9, 1930, letter of Coe’s is headed “The Islands, Tucker Pond, Wakefield, Rhode Island.”

meeting with NPS Associate Director Arno B. Cammerer on May 31, 1928. Cammerer was impressed with the work Coe had done and explained to him that an NPS inspection trip to the Everglades would be a first step in seeking national park status. Coe also met with Florida Senator Duncan U. Fletcher to discuss the introduction of a bill to authorize the inspection trip. Coe already had a mailing list of supporters, sending a report on his meetings in Washington to “friends” on June 5. In August, Coe drove over from Wakefield to Darien, Connecticut, and he met with NPS Director Mather. Mather had a massive stroke in early November 1928 and would have no further role in the Everglades project. Horace M. Albright took over as NPS director on January 12, 1929.¹¹⁶

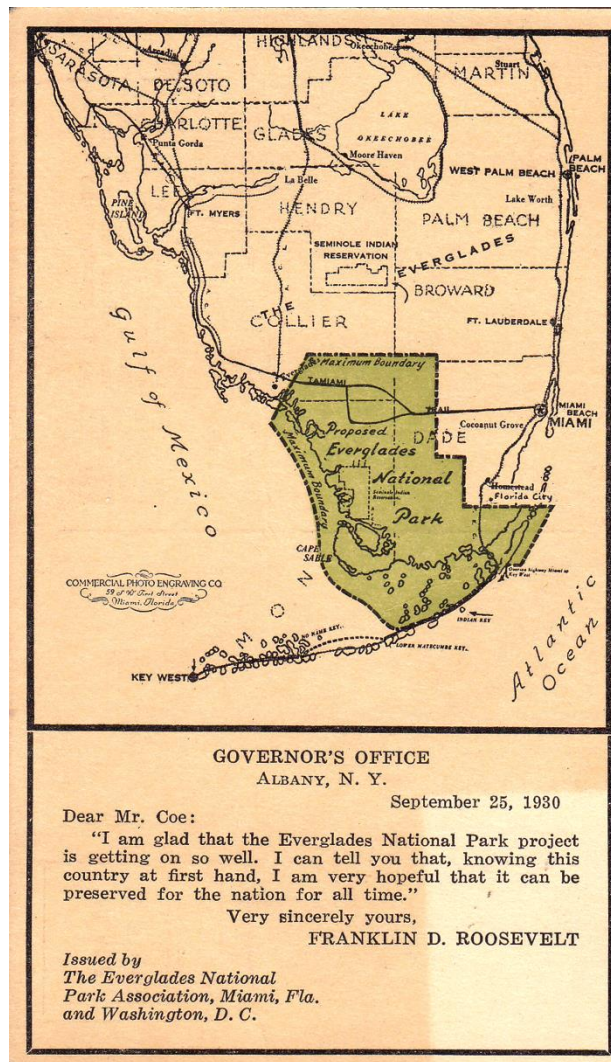


Figure 3–2, Everglades National Park Association postcard with proposed park boundary

¹¹⁶ Donald C. Swain, *Wilderness Defender: Horace M. Albright and Conservation* (Chicago: University of Chicago Press, 1970), 178.

From his May 1928 meeting with Cammerer, Coe would work closely with the NPS on the campaign for a national park in the Everglades. In the coming years, he would spend many weeks in Washington, DC, at times working from a desk at NPS headquarters. Getting a national park established in the Everglades became Coe’s mission for the rest of his life.

Coe stopped in Washington on his way back to Florida from Rhode Island and reached his Florida home by mid-November 1928. He then put the finishing touches on his plan for the formation of the Tropic Everglades National Park Association, designed to be the primary lobbying group in the campaign for a national park. Coe sent the association’s draft mission statement and a seven-page action plan to the NPS Washington Office for comments. The association was organized at a meeting held at the Nautilus Hotel in Miami Beach on December 11, 1928. Dr. David Fairchild was elected president and Ernest Coe executive secretary of the association (soon changed to executive chairman). The association ultimately dropped the modifier “Tropic,” becoming the Everglades National Park Association as of June 30, 1932. Dade County provided office space for the association in its recently completed 28-story courthouse building. (Figure 3–3. Everglades National Park Association membership card.)¹¹⁷

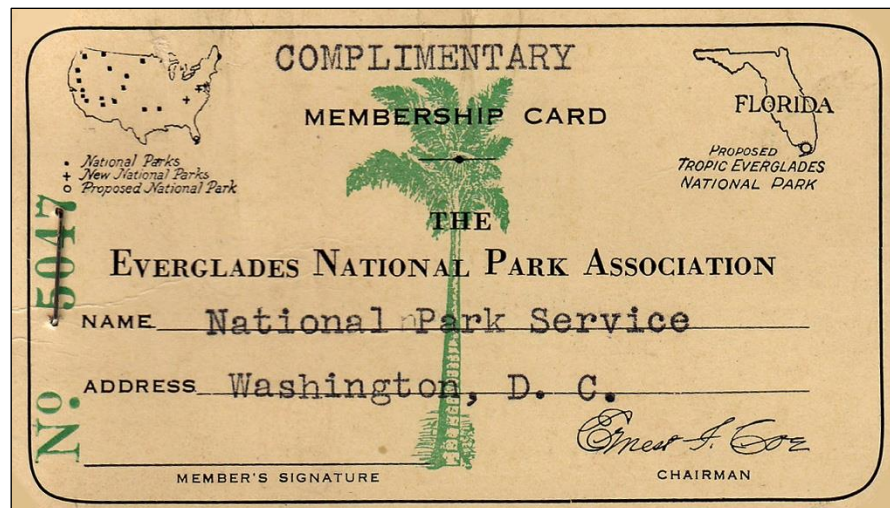


Figure 3–3. Everglades National Park Association membership card.

¹¹⁷ Other officers of the association were: Clayton Sedgwick Cooper, David Sholtz, and John O. Shares, vice presidents; F. Lowry Wall, secretary; and S. P. Robineau, E. Bruce Youngs, and Dan Chappell, legislative committee. Ernest F. Coe to John O. Shares, July 5, 1950, CP, EVER 22482A; Ernest F. Coe to Senator Fletcher, Dec. 20, 1928, Everglades National Park Association press release, June 30, 1932, NARA II, RG 79, NPS CCF, box 234.

Ernest Coe's passionate attachment to the Everglades, and his somewhat baroque prose style, are apparent in a publicity piece he wrote in Washington, DC in October 1928:

This is our country's only section within the boundaries of the States where the sightseer and tourist can find as many forms of stately palms, tropical orchids hanging from strange trees and see other truly tropical jungle growth, vieing [*sic*] in interest with unfamiliar tropic birds, butterflies and fish of various forms and colors; long reaches of tropic beaches and richly colored seas, verdure clad tropic islands, clear lakes and open glades. Here is where many tropic birds of fantastic form and colors congregate in great rookeries and where that weird bird, the flamingo, formerly was wont to flock by the thousands and will again as well as myriads of water fowl who make this their winter resort, just as soon as our National Government takes this wonderful area under its protecting wing.¹¹⁸

That Coe wanted to make the entire coastline of the Everglades accessible to motor tourists is also clear in his action plan (figure 3-4A and B. Map with Ernest Coe's planned scenic highway and legend for map). He anticipated raising funds for:

a scenic highway south from the Tamiami Trail, the logical North and West entrance through the miles of alluring Everglades, cypress hammock and lake country, the highway so designed as to traverse rookeries where great numbers of strange birds have for ages made their nesting home. This scenic highway to lead to the Cape Sable beaches, through thousands of great coconut palms. . . . This highway to lead from the Cape Sable beaches easterly to a junction with the State highway leading to and from Key West. Other roads to be developed later.¹¹⁹

¹¹⁸ "Re Proposed Tropic Everglades National Park, Location of the Cape-Sable Region of South Florida," NARA II, RG 79, NPS CCF, box 229.

¹¹⁹ Ernest F. Coe, "Progressive Sequence of Action," Dec. 6, 1928, NARA II, RG 79, NPS CCF, box 229.

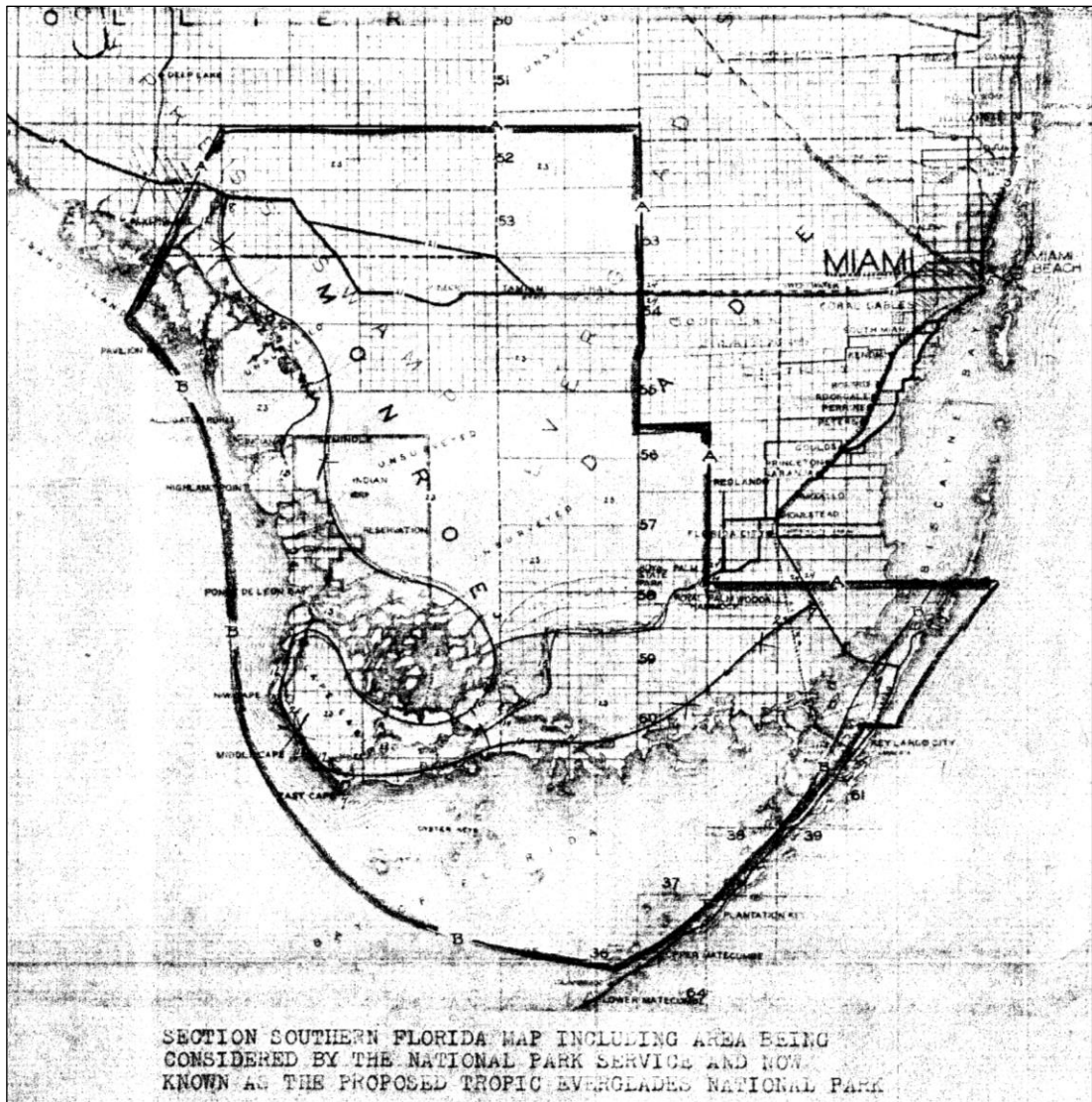


Figure 3-4A. Map with Ernest Coe's planned scenic highway and legend for map

Letters and numbers to left on following list correspond to letters and numbers on above map.

A Proposed land boundary lines	B Proposed shore lines and islands
A.C.L. Railroad station site	14 Boat stations along (10-11)
F.E.C. Railroad station site	15 Waterway to Royal Palm Hammock passing through jungles
East Coast State Highway	16 Gulf entrance to Ingraham Lake
West Coast State Highway	17 Ingraham Lake back of Cape Sable
Miami harbor	18-19 Cape Sables. Peak objectives and turning point for park travel
Everglades harbor	18 Logical housing area site
East Cape Sable	19 Camp colony opportunities
West park-highway entrance and boat landing	20 Inland passage from (18) and (19)
East park-highway entrance	21 Tamiami Trail
Trunk park-highway	22 Gator Lake and rookeries
One way highway exit via Royal Palm Hammock and tropic jungles	23 Great primeval nature areas
Turner River. West water entrance for boats going to Cape Sable, etc.	24 Highways adjoining park
General inside water route	25 Mumpus Bend

March 1, 1930
EFC/R

submitted by:
The Tropic Everglades Park Association

Figure 3-4B. Map with Ernest Coe's planned scenic highway and legend for map

Senator Fletcher asked the NPS to draft a bill authorizing an official investigation of the suitability of the Everglades as a national park, which he then introduced. At first, the NPS contemplated that the expenses of the investigating team would be borne by the local promoters of the park. When Robert Sterling Yard, executive secretary of the National Parks Association, got wind of this, he strongly objected. Yard and others believed that having the local park boosters pay for the trip would cast doubt on the objectivity of the investigation. Yard wrote the chairman of the House Public Lands Committee, and the bill was amended. On March 1, 1929, President Hoover signed the act directing the NPS to investigate and report to Congress on "the desirability and practicability" of establishing an Everglades park (see Appendix A for text).¹²⁰ Because the federal fiscal year was almost over and the most comfortable time to visit the Everglades was winter, the investigating trip was scheduled for early in 1930.¹²¹

¹²⁰ The bill authorizing an inspection passed the Senate on January 26, 1929, passed the House on February 26, 1929, and was signed into law on March 1, 1929, as P.L. 70-897.

¹²¹ Robert Sterling Yard to Don B. Colton, Chairman, Public Lands Committee of the House, Feb. 14, 1929, NARA II, RG 79, NPS CCF, box 230; Public Law 70-897, An Act to Authorize the Secretary of the Interior to Investigate and Report to Congress on the Advisability and Practicability of Establishing a National Park to Be Known as the Tropic Everglades National Park in the State of Florida. Text of the act is in Appendix A.

The Effect of Evolving Views on Wilderness and Its Preservation

The campaign for a national park in the Everglades got started at a time when a number of American conservationists and naturalists harbored serious misgivings about NPS policy. These misgivings centered on several issues. Some felt that the NPS, in its zeal to establish national parks east of the Mississippi, was accepting units into the system that did not meet traditional park standards. Traditionally, aesthetic grandeur on the order of the Yosemite Valley or the Grand Canyon had been the defining element of a national park. In the eyes of some, few of the tracts being considered for park status in the East measured up. Another area of concern was that the amount of road-building and other development that the agency was allowing in parks was beginning to damage the very values that had justified the parks' establishment. As historian Paul Sutter has ably demonstrated, hundreds of thousands of motorists had taken to the national parks and other natural areas in the 1920s. Those who believed that the essence of the national park experience was the chance to spend days at a time without seeing or hearing any sign of industrial civilization, deplored these developments. Devotees of primitive or wilderness values at times referred to those who came to the parks in cars and never ventured far from the developed areas as "tin-can" tourists (figure 3–5, Tourist camp, Dade County, 1939). Also troubling to some was the degree of influence they believed had been attained by local park boosters in determining the boundaries of prospective parks and other matters. It seemed that local proponents frequently pushed for the inclusion of uninspiring tracts that could be rapidly developed with campgrounds and other recreational facilities.¹²² All of these issues were part of the extended discussions that developed among conservationists, scientists, NPS officials, and members of Congress during the five-year campaign to get Everglades National Park authorized.

¹²² Paul S. Sutter, *Driven Wild: How the Fight Against Automobiles Launched the Modern Wilderness Movement* (Seattle: University of Washington Press, 2002), 100–11.



Figure 3–5, Tourist camp, Dade County, 1939

Prominent in these discussions was Robert Sterling Yard, executive secretary of the National Parks Association. Yard had worked closely with Stephen Mather and Horace Albright in the Department of the Interior from 1916 to 1918. Yard was responsible for *The National Parks Portfolio*, a lavishly illustrated love song to the existing national parks. Some 275,000 copies of the book were distributed to members of Congress, publishers, and other opinion leaders, playing a key role in the establishment of the National Park Service on August 25, 1916. Yard decided to leave the newly formed NPS in 1918, partly because Mather had made Albright rather than Yard his principal deputy and partly because Yard disagreed with the emphasis on tourism promotion that Mather and Albright shared. Yard then became executive secretary of the National Parks Association (NPA), found in May 1919, a position he would hold until 1933.¹²³ Although Yard had somewhat different goals for the parks than Mather and Albright, the three men worked together on many projects and issues. The NPA rapidly developed into an important independent supporter and sometime critic of the NPS. By the time that the campaign for a park in the Everglades got rolling in 1928, the NPA board of trustees included many of the most prominent American conservationists. Among the members were Frederick Law Olmsted Jr., probably the nation's premier landscape architect; Dr. T. Gilbert Pearson of the National Association of Audubon Societies; Dr. Henry Baldwin Ward, national president of the Izaak Walton League; and Dr. John C. Merriam, president of the Carnegie Institution.¹²⁴ These men, with Yard in the vanguard, would be important figures in the controversies over whether the Everglades was of national park caliber and how best its fragile environments could be protected.

¹²³ The organization changed its name to the National Parks and Conservation Association in 1970 and to the National Parks Conservation Association in 2000.

¹²⁴ Sutter, 102–106; Board of Trustee and Addresses, NPA, n.d. [1931?], JCM papers, box 188.

An understanding of the concerns that many conservationists had over a national park in South Florida requires a brief examination of the history of national park development in the East in the 1920s. Director Mather and his key aide Albright understood that most Americans lived far from the dramatic scenery of the western national parks.¹²⁵ Thus, it became an NPS priority to seek the establishment of parks east of the Mississippi River, closer to the country's major urban centers. These new parks would attract millions of new visitors, broadening the constituency for national parks. Mather and Albright knew that the more satisfied visitors they could bring to the parks, the easier it would be to maintain and expand the agency's budgets and its prestige within the federal bureaucracy. Almost all of the western parks had been created from land that was already in federal ownership. In the East, land would have to be either donated by the states or purchased by the states from private owners. The situation would require the NPS to work closely with state governments and with local booster groups, who were in a position to lobby state legislators and mount fundraising campaigns to buy land. Booster groups were also keenly aware of the economic benefits to be reaped by local businesses from the establishment of national parks.

In May 1926, eastern park development commenced in earnest when the Congress authorized the establishment of Great Smoky Mountains National Park on the Tennessee/North Carolina border, Shenandoah National Park in Virginia, and Mammoth Cave National Park in Kentucky.¹²⁶ All of these prospective parks involved private land that would have to be purchased by the respective states and donated to the federal government. In each case, only when a minimum acreage was conveyed would the NPS consider the park as established. Robert Sterling Yard believed that portions of the areas to be included in these parks did not meet national park standards for scenic grandeur. He felt that the NPS was bowing to local demands to include substandard cut-over forest areas that would be cheap to purchase and could be quickly developed for motor tourists. Troubling not just to Yard but to forester and regional planner Benton MacKaye, forester Robert Marshall, and other conservationists was the NPS's plans to cut ridgeline auto roads in the Shenandoah and Great Smoky Mountains Parks. The Skyline Drive in Shenandoah was completed, but pressure from conservationists killed the idea of a long ridgeline road in the Smokies.¹²⁷ This experience with the new parks in Appalachia put these conservationists on their guard about the wave of enthusiasm coming from South Florida hoteliers and others for a park in the Everglades. Ernest Coe's proposed scenic highway along the shoreline was of particular concern. As Paul Sutter has shown, the controversies over the parks in Appalachia and the Everglades played an important role

¹²⁵ After working with Mather in Washington in the teens, Albright was superintendent of Yellowstone National Park from 1919 to 1929. From his post as superintendent, he also coordinated field activities for all of the NPS and traveled frequently to Washington to consult with Mather and Assistant Director Arno B. Cammerer.

¹²⁶ The first national park east of the Mississippi River was Acadia, authorized in 1919.

¹²⁷ The road extends only from Newfound Gap to Clingman's Dome.

in causing some conservationists to place greater emphasis on the protection of wilderness values (sometimes articulated as “primitive” or “primeval” values) in the national parks. This emphasis led directly to the 1935 formation of the Wilderness Society, with Yard, MacKaye, Marshall, Harvey Broome, a leading member of the Smoky Mountains Hiking Club, and forester Aldo Leopold as founding members.¹²⁸

The campaign for a park in the Great Smoky Mountains also coincided with and reinforced a belief among scientists that preserving areas for their biological values was a valid justification for national park status. Although the chief argument for making a park in the Smokies was scenic, emphasizing the rugged topography of mountains reaching over 6,500 feet in height, the area’s worth as a botanical preserve also received attention. The discipline of ecology was in its infancy in America in the 1920s; nonetheless, the Ecological Society of America, founded in 1915, was beginning to advocate the preservation of representative areas that displayed natural conditions. As early as 1926, the society was stressing the importance of “the vast possibilities for science and education” in parks. Dr. John C. Merriam, of the Carnegie Institution and an important advisor to NPS on its educational programs, was thinking along similar lines. In 1928, he wrote a paper in which he concluded: “There is reason for attempting complete preservation of certain relics of plant and animal life associations for the enjoyment and appreciation of the people, and for future needs in scientific and economic studies.” The idea of “biological” national parks, then, was beginning to gain adherents and became part of the conversation over the fitness of the Everglades as a national park.¹²⁹

Yard and his like-minded allies kept a close watch as Coe and the Tropic Everglades National Park Association waited for the official team from NPS to make its inspection. The association continued to mount a vigorous promotional campaign for the park. A keynote of the campaign was the number of tourist dollars a national park would bring to Florida, estimated by the association at \$75 to \$100 million annually (2014 equivalent of \$1.2 to \$1.6 billion). Coe solicited statements of support from prominent scientists and conservationists, some of whom had never visited the area. Yard wrote of the association that “[t]heir proposed ballyhoo, in a word, is vicious, and I am writing strenuous letters to that effect.” He succeeded in getting Coe to hold back on disseminating the statements of support pending the report of the inspection team. As early as June 1928, Associate Director Cammerer had warned Coe to limit his publicity efforts prior to the inspection trip. It was the sort of caution that Coe could rarely heed for very long. In October 1929,

¹²⁸ Shenandoah and Great Smoky Mountains were authorized by P.L. 69–268 (44 Stat. 616), May 22, 1926. Darwin Lambert, *Administrative History of Shenandoah National Park, 1924–1978*, typescript (Luray, VA: NPS, January 27, 1979), 60; Sutter, 4–6, 130–131, 168, 230–231.

¹²⁹ Alfred Runte, *National Parks: The American Experience* (Lincoln: University of Nebraska Press, 1979), 115–16; Sutter, 125; “A Change of Policy for the National Parks,” *Ecology* 7/1 (Jan. 1926), 112; John C. Merriam, “Significance of Biological Features in the Educational Program of National Parks,” Aug. 24, 1928, NARA II, RG 79, NPS Dir. Recs., Albright, box 4.

on his way back to Florida from summering in Rhode Island, Coe stopped in Washington, DC and had his first meeting with Director Horace Albright. Once back in Florida, he worked on arrangements for the inspection team's visit.¹³⁰

The NPS Inspection Team and its Report

The NPS official investigating party arrived at Miami by train on February 11, 1930. Its members were:

Horace M. Albright, Director, NPS

Arno B. Cammerer, Associate Director, NPS

Elbert E. Burlaw, Administrative Assistant to the Secretary of the Interior

Roger W. Toll, Superintendent, Yellowstone National Park

T. Gilbert Pearson, President, National Association of Audubon Societies
(Official Collaborator)

Dr. Hermon C. Bumpus, former director, American Museum of Natural History
(Official Collaborator)

Unofficial participants in all or parts of the inspection trip included Dr. W. A. Clark of San Francisco, Caspar W. Hodgson of the Campfire Club of America, Dr. M. W. Stirling of the Bureau of American Ethnography, and Harlan P. Kelsey of the Southern Appalachian Park Commission. Serving as local guides for the tours were Ernest F. Coe and Dr. David Fairchild of the Everglades National Park Association. South Florida Congresswomen Ruth Bryan Owen and author Marjory Stoneman Douglas also participated.¹³¹

The inspection began with an aerial survey of the Everglades from the Goodyear blimp *Defender* that allowed the party to view parts of the area inaccessible by other means (figure 3–6, NPS inspection party and Goodyear blimp, 1930).¹³² Marjory Stoneman

¹³⁰ Quotation from Robert Sterling Yard to Henry S. Bryant, Jan. 26, 1929, JCM papers, box 187; Robert Sterling Yard to Ernest F. Coe, Feb. 6, 1929, NARA II, RG 79, NPS CCF, box 230; ENPA, "Florida's Great Opportunity," ca. 1937, CP 22392a.

¹³¹ Arno B. Cammerer, Confidential memorandum for the files, concerning the Everglades inspection, Feb. 24, 1930, NARA II, RG 79, NPS CCF, box 229; Horace M. Albright, *The Birth of the National Park Service: The Founding Years, 1913–1933* (Salt Lake City: Howe Bros., 1985), 256. Marjory Stoneman Douglas was the daughter of *Miami Herald* publisher Frank Stoneman. A journalist, author, and conservationist, Douglas became indelibly associated with the Everglades with the publication of her first book in 1947, *The Everglades: River of Grass* (see Chapter 5).

¹³² After having built blimps and dirigibles for the U.S. military, Goodyear Tire & Rubber Co. launched its own blimp fleet in 1925. The large airships became a major promotional tool for the company, which arranged with the City of Miami to station them at Watson Island, east of the city. It made sense for Goodyear to fly inspection parties over the Everglades; a national park would promote tourism, which could only help tire sales. Maurice O'Reilly, *The Goodyear Story* (Elmsford, NY: Benjamin Co., 1983), 60–66.

Douglas and Ernest Coe had to ride in a small compartment hung below the dirigible's main cabin. Douglas has left an unforgettable account of Coe "being sick, as inconspicuously as possible," in a bucket during the flight. The blimp trip was followed by lunch at the home of Dr. Fairchild, where the visitors met a number of scientists, including Charles Torrey Simpson, Dr. Harold H. Bailey, and herpetologist Dr. Thomas Barbour, director of Harvard University's Museum of Comparative Zoology. The party then proceeded to Matecumbe Key for a two-and-one-half-day excursion into Florida Bay and up the west coast on the houseboat *Friendship*. While anchored in Tarpon Bend, the group watched as "[a] vast vermilion and gilt sunset smoked up from the Gulf to the west as thousands and thousands of adult birds in full nuptial plumage" returned to their nests, as Douglas recalled it (figure 3-7, NPS inspection party on boat, 1930). A comic moment occurred when Dr. Bumpus fell out of the boat. At the conclusion of the boat trip on February 14, the party drove to Royal Palm State Park, where May Mann Jennings and other clubwomen provided lunch and guided tours of the hammock. That evening, the official members of the party were provided costumes and reserved seats for a fancy-dress ball at the Nautilus Hotel, Miami Beach, sponsored by the Committee of One Hundred. The next day, the inspection party had a luncheon meeting with business leaders. Albright, Cammerer, and Burlew then departed for North Florida while the rest of the group toured the Big Cypress Swamp with Dr. Bailey.¹³³



Figure 3-6, NPS inspection party and Goodyear blimp, 1930

¹³³ Arno B. Cammerer, Confidential memo for the files, concerning the Everglades inspection, Feb. 24, 1930, NARA II, RG 79, NPS CCF, box 229; Douglas, "The Forgotten Man." The Committee of One Hundred, a social and philanthropic group of prominent South Florida residents, was then just two years old.



Figure 3–7, NPS inspection party on boat, 1930

The NPS did not release a statement concerning the Everglades inspection trip until May 1930, but within three weeks of his return from Florida, Director Albright told a meeting of the Camp Fire Club that the team was “unanimous” in favor of national park status. Robert Sterling Yard believed Albright was jumping the gun. He believed that such a public commitment would be difficult to withdraw, even if subsequent information cast doubt on the area’s eligibility. Albright wrote confidentially to a board member of the New York Zoological Society in March 1930 stating the same unanimous opinion in favor of national park status. Secretary of the Interior Ray Lyman Wilbur announced on May 19, 1930, that the team had reported that the Everglades area “measured up to the high standards prescribed for national park establishment,” and that he would recommend that Congress authorize the park project.¹³⁴ Apparently this statement was rushed out when the department learned that Representative Owen had on May 14 introduced a bill (H.R. 12381) authorizing an Everglades park, without waiting for the secretary’s formal report.¹³⁵ Wilbur’s press release further noted that “the area should be preserved to protect the primitive character of the country.” As if anticipating the sort of criticism some in Congress would direct at the project, Wilbur stated that some team members’ “original conception of the Everglades as an impassable tropical jungle, festooned with lianas and with miasmatic swamps full of alligators, crocodiles and venomous snakes, was entirely shattered.” Ernest Coe was in Washington in fall 1930, helping to draft the report that was to go to Congress over Secretary Wilbur’s signature.¹³⁶

¹³⁴ Ray Lyman Wilbur was an M.D. and a lifelong friend of Herbert Hoover, who appointed him secretary of the interior on March 5, 1929.

¹³⁵ Senator Fletcher introduced an identical measure, S. 475, on December 17, 1930. Ernest F. Coe, “Story of the Everglades National Park Project,” typescript, CP, EVER 22888, 66.

¹³⁶ Robert Sterling Yard to John C. Merriam, March 5, and Oct. 22, and Oct. 25, 1930, JCM Papers, box 187; DOI press release, May 19, 1930, NARA II, RG 79, NPS CCF, box 226; Director Albright to William White Niles, New York Zoological Society, Mar. 29, 1930, NARA II, RG 79, NPS CCF, box 230. Yard wrote to Merriam in October 1930 that Coe thought the draft report “corking” and was “awfully proud” that he had “a little part” in framing it.

In December 1930, Secretary Wilbur transmitted his official report on the Everglades to Congress. He found the Tropic Everglades National Park project to be “of outstanding merit, and the park, if established . . . would measure up to established national park standards.” He acknowledged that the scenery in certain sections, presumably the sawgrass marshes, had “a uniformity that may be said to approach monotony.” He emphasized the great diversity of environments, including the mangrove forests, and the great variety of wildlife, much of it not found elsewhere in the U.S. In recognition of the growing interest in biological parks, Wilbur also mentioned the area’s value to scientists. He noted the threat to the area from fire and plant collectors and urged Congress to act while there was still time. The size of the proposed park was about 2,000 square miles (1.3 million acres), some 20 to 25 percent of which was state-owned. Relying heavily on estimates from the Tropic Everglades National Park Association, Wilbur declared land values to be quite low, predicting that the one million acres still in private hands could be obtained for about one dollar an acre. He foresaw fishing, boating, including motorboating, and nature observation as the principal visitor activities. He was careful to note that “a considerable part” of the area “would be retained in its present state as primitive wilderness.” Wilbur was confident that developed areas would be limited and would “not seriously interfere with the objective of conservation” although he noted that any roads would have to be constructed on dredged material. He saw the Everglades as a fitting complement to the other national parks being developed in the East, and he noted that it would draw its heaviest visitation in winter, when many of the western parks were difficult or impossible to visit. He devoted a sentence of his report to the area’s shell mounds that gave evidence of prehistoric human habitation.¹³⁷

The tentative boundary for the park was indicated on a map that accompanied the secretary’s report (figure 3–8, maximum proposed boundary from 1934 authorizing act). This boundary followed the boundary that Coe’s ENPA advocated. The northern boundary line was set close to the 26th parallel, taking in some 225,000 acres north of the Tamiami Trail. This original maximum authorized boundary ran along the inner shoreline of the Florida Keys and took in a 12-mile section of Key Largo. If adopted, the boundary would have included 93 percent of the land area of Monroe County.¹³⁸

The idea of a national park in the Everglades had significant support from the editorial pages of Florida’s newspapers. The *Miami Herald* led the way, but support came as well from the *Miami Daily News* (the *Daily News-Metropolis* for much of the 1920s), the *Florida Times-Union* (Jacksonville), the *St. Petersburg Times*, and many other papers. National newspapers and magazines also pushed the idea from the time the first bill was introduced until final passage in 1934. In March 1931, the editors of the monthly journal

¹³⁷ Ray Lyman Wilbur, *Report of the Secretary of the Interior to Accompany S. 475*, Dec. 3, 1930, 71st Congress.

¹³⁸ Wilbur, 17.

Parks and Recreation viewed the interest of Congress in an Everglades park as “welcome news.” In January 1932, the *New York Herald Tribune* editorial page came out strongly in favor of a national park.¹³⁹

Concerns over Preserving the Wilderness Values of the Everglades

The NPS firmly believed that the Everglades should contain a national park, but a number of scientists and conservationists had reservations. The Everglades National Park project was a hot topic in conservation and scientific circles even before Secretary Wilbur made his report. Some who had seen the area felt it lacked the dramatic scenic qualities of other national parks. Dr. John C. Merriam initially felt that only the hammock and mangrove areas had the inspirational qualities needed for a national park. The scientists’ greatest fear was that the area could not be developed for visitor access without great damage to the natural environment. Dr. Merriam believed that the Ingraham Highway had already driven away wildlife and changed the nature of the nearby vegetation. The Tropic Everglades National Park Association added to the unease by circulating a map showing substantial potential development, including the coastal scenic highway, boat stations, and “camp colony opportunities” (see figure 3–4A). In conversations, Ernest Coe also spoke of building a resort hotel at Cape Sable. Concern over these development ideas led a number of scientists to suggest that the area would be better preserved as a national monument or wildlife refuge, where road and recreational development would be less than in a national park. Another concern was that the maximum area recommended by the secretary of the interior, embracing 2,000 square miles, included developed areas, such as the Tamiami Trail, railroad lines, and canals.¹⁴⁰ The American Forestry Association articulated the reservations shared by many in a resolution in December 1930:

The American Forestry Association’s approval of the proposed Tropic Everglades National Park is contingent upon the restriction of the area to be included in the park to lands which come fully up to the standards of the great National Parks, upon the preservation to the fullest possible degree of the wilderness character of the area, and upon placing the primary emphasis on national as distinguished from local considerations in acquisition of lands and in administration of the park.¹⁴¹

On December 15, 16, and 18, 1930, the House Committee on the Public Lands held hearings on the bill (H.R. 12381) introduced the previous May by Congresswoman

¹³⁹ *Florida Times-Union*, Sept. 9, 1931, “Vision and Vigor,” *St. Petersburg Times*, Oct. 11, 1931; “The Proposed Everglades National Park,” *Parks & Recreation*, March 1931.

¹⁴⁰ John C. Merriam, Everglades of Florida, Mar. 1 to 6, 1929, NARA II, RG 79, NPS Dir. Recs., Albright, box 4; Robert Sterling Yard to John C. Merriam, Oct. 22 and Oct. 24, 1930, JCM papers, box 197.

¹⁴¹ American Forestry Association, “Preservation of Florida Everglades Approved by the American Forestry Association,” Dec. 19, 1930, NARA II, RG 79, NPS CCF, box 230.

Owen. The bill was quite brief, providing that the Tropic Everglades National Park would be considered established when the secretary of the interior had accepted some portion of the approximately 2,000 square miles contained within the maximum boundary as indicated on the map accompanying the secretary's December 3, 1930, report. It was left to the secretary to determine the precise boundary at a later date. The NPS Organic Act of 1916 was to guide the administration and development of the park. Testifying before the committee were Congresswoman Owen, Senator Fletcher, Director Albright, Ernest Coe, Dr. T. Gilbert Pearson, president of the National Association of Audubon Societies, Dr. John Kunkel Small, and several others. Albright described the area as "absolutely distinctive" and up to national park standards. He thought that "probably two-thirds of this park should be kept as a wilderness accessible only by boat or on foot." Nonetheless, he saw no reason why the Royal Palm Hammock, the Cape Sable beaches, and one or two rookeries could not be made accessible to visitors. Albright believed that the Ingraham Highway could be improved and modernized and that it might be necessary to run a road "some distance" south from Everglades City into the park. Under questioning, he assured the committee that it would be easy and inexpensive to build roads in the park. He estimated that land could be acquired by the state for \$1.00 to \$1.50 per acre, except on Key Largo, where the cost would be greater.¹⁴² In short, Albright did all he could to sell the project to congress members.

One incident during the hearings has entered into the lore of the Everglades, sometimes in a garbled form. Baltimore surgeon and amateur naturalist Dr. Howard A. Kelly, who had often visited South Florida, also testified before the committee. He brought conch shells and *Liguus* tree snail shells as exhibits and also produced a live specimen from a sack, remarking "I brought this to show you what a nice, big, kindly creature a king snake is." With that he placed the snake on the table in front of him. In Director Albright's recollection, this created a sensation; a woman in the audience fainted, and the court reporter jumped up, knocking over his stenotype machine. Some skeptical congress members were already branding the Everglades bill "the snake and alligator swamp bill." Not wanting to give any encouragement to the naysayers, Congresswoman Owen quickly picked up the snake and placed it on her lap, showing it to be harmless. When asked what would have happened had the snake bitten her, the unflappable Owen responded, "the consequences of such an incident would be much less harmful than if the representatives halted discussion of the park project." Reporters recognized some good copy and spread the story across the country.¹⁴³

¹⁴² U.S. House Committee on Public Lands, *Establishment of Everglades National Park: Hearings*, 71st Cong. (Dec. 15, 1930).

¹⁴³ U.S. House Committee on Public Lands, *Establishment*, 55–56; "Ruth Owen Charms Snake for House Land Committee," *New York Times*, Dec. 17, 1930; "Park Proposal Is Due to Pass," *Miami Daily News*, Sept. 17, 1931; Howard A. Kelly to Arno B. Cammerer, Feb. 22, 1934, NARA II, RG 79, NPS CCF, box 233; Davis, *Everglades Providence*, 338–339; Albright, *Birth of the National Park Service*, 257.

Robert Sterling Yard was ill and unable to attend the hearings, so he sent a letter to the committee's chairman. Yard had only two days' notice of the hearings and lacked enough time to have his letter approved by the board of the NPA. He agreed that the Everglades needed protection but urged careful consideration by scientists of what type of protection to afford. He advised the committee to "inquire particularly into the plan for developing and administering the proposed park" and to inform the public "to what extent, if any, and under what conditions, tourists will be permitted to enter the protected area." Yard also raised questions about how the "local promoters" planned to raise money for land acquisition. Yard's letter caused quite a stir in conservation circles. Although the letter represented Yard's personal views, they were shared by other NPA board members. Two members, Dr. Merriam and Dr. Vernon Kellogg of the National Research Council, contacted Secretary Wilbur about wilderness preservation in the proposed park. The Ecological Society of America wrote Chairman Colton of the house committee expressing concerns that the NPS would bow to local pressure for excessive park development.¹⁴⁴

Although there was some overlap, wilderness advocates, such as Yard, had a substantially different perspective than scientists, such as Victor E. Shelton of the Ecological Society of America. Yard and the other founders of the Wilderness Society placed a value on wilderness that was primarily anthropocentric and had strong spiritual dimensions. In essence, they wanted to save wild spaces for a special kind of visitor experience that appealed to just a few. The ecologists were much more concerned with preserving and studying biological systems from which all visitors would be excluded. These differing points of view are explored in greater depth in Chapter 10.

¹⁴⁴ Robert Sterling Yard to Don B. Colton, chairman, House Public Lands Committee, Dec. 15, 1930, V. E. Shelford, Ecological Society of America, to Don B. Colton, NARA II, RG 79, NPS CCF, box 230.

A Resolution on the Need for Preservation of Everglades Areas

Whereas, the southern end of the Florida peninsula contains biological features of unique character, which are found nowhere else, and

Whereas, it has been proposed to establish a national park for the preservation of these features in their primitive state, therefore the council of the American Association for the Advancement of Science

Approves of the establishment of such a park, but only under conditions that will completely exclude railway and other commercial developments and fully protect the floral and faunal associations within the limits that are established.¹⁴⁵

While scientists and conservationists were discussing how best to protect the natural assets of the Everglades, a group of U.S. Senators decided to conduct its own inspection. Gerald P. Nye of North Dakota, chairman of the Senate Public Lands Committee, five of his colleagues, and NPS Associate Director Arno B. Cammerer arrived in Miami on December 26, 1930, for a four-day tour. Ernest Coe, Dr. Fairchild, and Dr. T. Gilbert Pearson of the Audubon Society were the hosts for a series of trips that largely duplicated those of the NPS party of the previous winter, including a blimp ride. Some time later, Senator Nye's hometown newspaper sharply criticized the \$4,000 cost of the trip.¹⁴⁶

As anthropologist Laura Ogden has noted, naturalists who celebrated the biological values of the Everglades tended to devote little attention to the local whites who lived, hunted, or fished there, viewing their presence as, in a sense, transgressive. Naturalists were somewhat more likely to acknowledge the Seminole Indians' place in the Everglades, but often this mainly served to emphasize the remoteness of the area and its need for protection. Early on, the House of Representatives showed some concern for the claims of the Seminoles in the Everglades. When the Everglades bill was reported out of the House Committee on Public Lands on January 17, 1931, the authorizing act had been amended as follows:

¹⁴⁵ American Association for the Advancement of Science, Board and Council Minutes, 1926–1935, AAAS Archives; Ecological Society of America, "Resolution on Everglades Tropical National Park," Dec. 31, 1930, *Ecology* 12/2 (Apr. 1931), 430. The Ecological Society's resolution stated: "The Ecological Society of America endorses the formation of the Everglades National Park provided the largest possible portion of it be preserved in its primitive wilderness condition, its value and its classification as a museum of nature and hence as a National Park being dependent upon such preservation. The boundaries of the proposed park should be so drawn as to exclude all railroad development [emphasis in original]."

¹⁴⁶ The other senators were Tasker L. Odie, Nevada; Otis F. Glenn, Illinois; Henry F. Ashurst, Arizona; Thomas J. Walsh, Montana; and Peter Norbeck, South Dakota. "New Territory Seen by Senate Group in Blimp," *Miami Daily News*, Dec. 30, 1930; "Mr. Nye Stages Some Party," *Fargo Forum*, June 25, 1932; Coe, "Story of the Everglades National Park Project."

Provided further, that nothing in this act shall be construed to lessen any existing rights of the Seminole Indians which are not in conflict with the purposes for which the Everglades National Park is created.¹⁴⁷

This language remained in all subsequent versions of the bill and in legislation that finally passed in May 1934.

Director Albright did what he could in the early months of 1931 to reassure conservationists that the NPS was committed to the preservation of the wilderness areas of the Everglades. Albright believed that Coe's "flood of propaganda and unhappy approach" were counterproductive. Robert Sterling Yard kept up the pressure by writing twice to Secretary Wilbur, which annoyed Director Albright, who was not pleased that Yard went over his head.¹⁴⁸ Albright wrote Henry Baldwin Ward to uphold the principle that public enjoyment was compatible with preservation: "We have never had any intention, if the Everglades come to us, of opening up its wilderness areas, those great sections known as White Water Bay, the Harney River country, and the Shark River country." By reconstructing the Ingraham Highway, Albright believed that "perhaps 25 per cent" of the park would be accessible to visitors. He relied on the wet and forbidding nature of the rest of the area to deter visitation and preserve it intact. He pointedly asked, "How could we ask the people to pay taxes to maintain a great area like this if some provision is not made for everybody to get a glimpse of what the park is?"¹⁴⁹

By early 1931, it was abundantly clear that the Florida supporters of the proposed park had no interest in a designation other than a national park and would have scant success in raising land-acquisition funds for anything but a national park. This was acknowledged by Albright, Yard, Ward, and others. With national park status a given, conservationists turned instead to attempting to amend the authorizing legislation to include explicit protection of wilderness values. Already on January 22, 1931, Yard had met with Congresswoman Owen and another Florida representative, Herbert J. Drane, to propose adding language to the draft legislation that would prohibit any through highways in the park, ban any public road running north from Cape Sable, and exclude from the boundary any "areas whose primitive quality had been impaired." Owen was open to these changes, but the end of the last session of the 71st Congress was rapidly approaching, and Director Albright feared that any attempt to amend the bill would compromise its chances of passage. Yard also shared his proposed amendments with Frederick Law Olmsted Jr., who agreed with their purposes but questioned the wisdom of attaching them to the authorizing legislation. As it happened, opposition from

¹⁴⁷ Chronology, Everglades National Park—Florida, EVER 22965.

¹⁴⁸ Albright seemed personally affronted by Yard's attitude, writing that it was "a reflection on the service and myself in its intelligent planning." Director Albright to H. C. Bumpus, Mar. 14, 1931, EVER 42242.

¹⁴⁹ Robert Sterling Yard to SOI Wilbur, Jan. 7 and Jan. 9, 1931, Horace Albright to Henry Baldwin Ward, Jan. 24 and Jan. 30, 1931, NARA II, RG 79, NPS CCF, box 230.

a group of Congress members led by New York's Fiorello LaGuardia killed the bill in the House after it had passed in the Senate.¹⁵⁰ The reasons for LaGuardia's opposition are not clear, but Olmsted, for one, believed that they were political in nature and not related to the bill's merits. Olmsted did not lament the bill's failure, believing a delay would give "an excellent opportunity for further study and for attempting to draft a more nearly adequate statement . . . of the functions and purposes appropriate to . . . the area." He expressed a preference for a positive statement of the park's functions and purposes rather than burdening the authorizing act with specific prohibitions.¹⁵¹

With the installation of the new 72nd Congress in March 1931, Congresswoman Owen and Senator Fletcher again introduced bills (H.R. 5063 and S. 475) to authorize Everglades National Park and asked for formal recommendations on them from the secretary of the interior. The department pronounced itself in favor of the bills in December 1931.¹⁵²

The Olmsted-Wharton Report

In an effort to get an authoritative judgment and put to rest any doubts about the objectivity of previous assessments of the Everglades, the NPA in October 1931 established a subcommittee of its committee on new national park projects. The subcommittee consisted of Frederick Law Olmsted Jr. and William P. Wharton. Wharton had long been associated with the Massachusetts State Park System and was on the boards of the National Association of Audubon Societies and the American Forestry Association. Olmsted and Wharton spent ten days in the Everglades region, beginning January 4, 1932. They viewed the area from a Goodyear blimp and a small airplane and spent a full week in boats, working their way from Key Largo to Everglades City, with excursions into Alligator Lake and Whitewater Bay, the upper reaches of the Shark River, and the lower reaches of Rogers River. The two walked extensively over the Cape Sable area, visited Royal Palm State Park, and spoke with many fishermen, guides, hunters, and trappers. Olmsted and Wharton submitted their report to the NPA board of trustees, which adopted it on January 18, 1932. The NPA sent the report to the Senate, which arranged to have 6,000 copies printed (figure 3–9, Cover of Olmsted-Wharton report). Excerpts from the report appeared in the March 1932 issues of *American Forests* and the *Bulletin of the Garden Clubs of America*. Mrs. William A. Lockwood, president of the

¹⁵⁰ LaGuardia was an "Independent Republican" who frequently opposed the initiatives of Republican President Herbert Hoover and his secretary of the interior.

¹⁵¹ Robert Sterling Yard to Wallace W. Atwood, Jan. 22, 1931, Frederick Law Olmsted Jr. to Robert Sterling Yard, Feb. 10, 1931, Frederick Law Olmsted Jr. to Henry Baldwin Ward, March 30, 1931, JCM Papers, box 187; Robert Sterling Yard to Secretary Wilbur, Jan. 27, 1931, Albright to SOI Wilbur, Jan. 27, NARA II, RG 79, Toll Recs., box 4.

¹⁵² H.R. 5063 and S. 475.

Garden Clubs of America, arranged for the printing of 4,000 copies of the excerpted article, which were distributed to all NPA members and other conservationists.¹⁵³

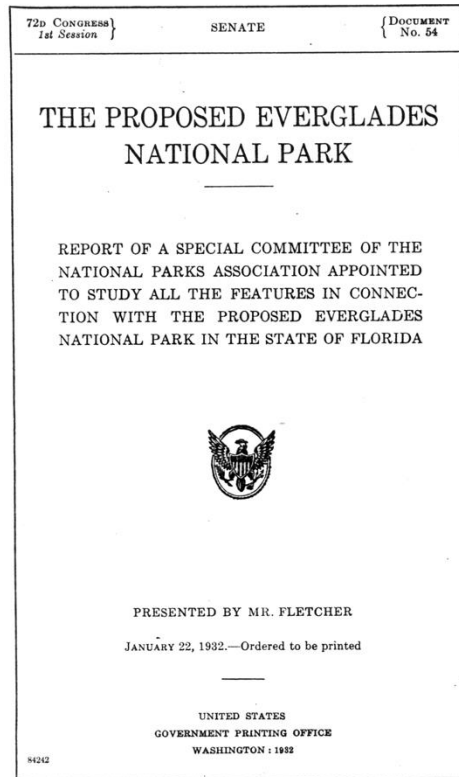


Figure 3–9, Cover of Olmsted-Wharton report

Olmsted and Wharton concluded that the Everglades had extensive areas that had all of the inspirational qualities of existing national parks and yet was so different from other parks “as to have a special force of novelty.” They deemed it “highly desirable” that a national park be established. The two believed that the coastal mangrove forests and “the abundance of many species of wild bird life not commonly found in other parts” of the U.S. were particularly noteworthy. Although unwilling to advance specific recommendations about future park development, they were firm in believing “that the primitive character of the region should be protected to the utmost.” Because of the “intricate and unstable” ecological balance in the area, Olmsted and Wharton urged “prolonged and intensive study by . . . botanists, zoologists, and geologists” before any plan of park development was adopted. It is interesting to note that they understood the importance of the flow of water to the proposed park from north of the Tamiami Trail and urged that a way be found to keep that area from being

¹⁵³ *The Proposed Everglades National Park: Report of a Special Committee of the National Parks Association Appointed to Study All the Features in Connection with the Proposed Everglades National Park in the State of Florida*, Sen. Doc. No. 54, 72nd Cong., 1st sess. (Washington, DC: GPO, 1932); NPA Board of Trustees Meeting Minutes, Jan. 18, 1932, NPA Annual Meeting Minutes, Apr. 23, 1932, NPCA papers, series 1, box 13.

drained, if it were not included as part of the park. In sum, Olmsted and Wharton gave a ringing endorsement to the Everglades park project.¹⁵⁴

In the 72nd Congress, the Everglades National Park bill again easily passed in the Senate but languished in the House. The country was three years into the Great Depression, and many believed that keeping a tight rein on government spending would help to get the economy going again. On November 8, 1932, the Democratic ticket of Franklin D. Roosevelt and John Nance Garner won the presidency in a landslide, winning 472 electoral votes to Herbert Hoover's 59. Garner, who was still Speaker of the House until his inauguration as vice president, held the key to the Everglades bill's chances in the House. Outgoing Secretary of the Interior Wilbur visited the Everglades in late December 1932. He reiterated his strong support for a park in the Everglades and urged Congress to authorize it. Ernest Coe marshaled all the forces of the Everglades National Park Association and its allies to lobby for passage. In the waning hours of the 72nd Congress on March 4, 1933, Speaker Garner refused to allow the Everglades bill to come to a vote, writing to Florida Congressman Herbert J. Drane "in view of the fact that our national government is confronted with a deficit of huge proportions, I do not feel that it would be wise to enact this legislation at this time."¹⁵⁵ Once again, the Everglades bill had failed but again not because of opposition on its merits.

In the spring of 1932, while the Everglades bill was pending in Congress, Ruth Bryan Owen had faced a challenge in the Democratic primary election from West Palm Beach attorney J. Mark Wilcox. In the Solid South of this period, the Republican Party had few adherents, and the winner of the Democratic primary was virtually assured of victory in the general election. Ernest Coe somehow got the idea that the Everglades bill would have a better chance of passage if someone other than Owen sponsored it. Director Albright assured Coe "if Mrs. Owen cannot get it through then it cannot be gotten through." Coe apparently continued to insinuate that Owen was letting her ego get in the way of the bill's passage, and Albright wrote to Associate Director Cammerer, "After I wrote him [Coe] the last time, he cracked Mrs. Owen again. I am pretty nearly thru [*sic*] with him." Although she had significant support from Florida newspaper editors and enthusiastic crowds at her campaign rallies, Owen lost to Wilcox by 12,000 votes in June 1932. She was surprised and embittered by her defeat and accused Coe of permitting rumors to circulate that she had "insisted on claiming credit and pushing my name forward to the detriment of the [Everglades National Park] bill." Coe wrote Albright that Owen "had used unfortunate judgment" but that he in "no way consciously aided in her defeat." Coe's attacks on Owen more likely revealed his poor judgment. In the end,

¹⁵⁴ *The Proposed Everglades National Park: Report of a Special Committee*, 1, 5–8, 11.

¹⁵⁵ "Florida Park Tour Takes Wilbur on 1,200-mile Trip," *Baltimore Sun*, Dec. 28, 1932; "Mrs. Owen Thanks Supporters as Term Ends," *Cocoa Tribune*, March 9, 1933. The *Sun* noted that "the proposed Everglades National Park in Florida holds a record for official visitations, particularly in the winter time."

Owen's performance on the Everglades bill was not a factor in the election. Wilcox had made the repeal of Prohibition his number one issue, and Owen's unwillingness to compromise on that issue led to her defeat. Once in office, Wilcox proved a strong supporter of the Everglades park project.¹⁵⁶

¹⁵⁶ Sally Vickers, "Ruth Bryan Owen: Florida's First Congresswoman and Lifetime Activist," *Florida Historical Quarterly* 77/4 (Spring 1999):467-69; Dir. Albright to Assoc. Dir. Cammerer, Ruth Bryan Owen to Director Albright, June 7, 1932, Ernest F. Coe to Dir, Albright, June 21, 1932, NARA II, RG 79, NPS CCF, box 231.

The Final Push for Authorization

When President Roosevelt took office in March 1933, he enjoyed tremendous Democratic majorities in both houses of the 73rd Congress. The advantage was 23 votes in the Senate and nearly 200 votes in the House of Representatives. Roosevelt was on record as a firm supporter of a national park in the Everglades, as was his secretary of the interior, Harold L. Ickes. Not far into the Roosevelt Administration, the NPS would have a new director, as well. Horace Albright had achieved his goals of reorganizing the agency and having it assume the administration of battlefields and other historic sites from the War Department. Albright announced that he would retire. Associate Director Arno B. Cammerer took over as director on August 10, 1933.¹⁵⁷

Once the new 73rd Congress was in place, Senator Fletcher again introduced the Everglades authorization bill, and Congressman Wilcox introduced a companion measure in the House (H.R. 2837). On May 29, 1933, the Senate bill passed unanimously. In June 1933, the Bureau of the Budget notified the secretary of the interior that it would approve the Everglades bill only if it were amended to provide that no federal funds would be expended on “administration, protection, or development” of the park for five years from the date of enactment. Congressman Wilcox reluctantly agreed to this amendment in order to obtain committee approval. As reported out of the Committee on Public Lands on June 14, 1933, H.R. 2837 contained the five-year ban on federal outlays and the clause protecting the rights of the Seminole Indians, but it did not contain any mention of wilderness values.¹⁵⁸

Discussion among conservationists on how best to protect the flora and fauna of the Everglades had continued after the authorizing legislation failed in the 72nd Congress. Committees of both the National Parks Association and the American Forestry Association (AFA) were at work on suggested amendments to the bill as introduced in the new 73rd Congress. The AFA committee consisted of Dr. John C. Merriam, George D. Pratt, and Ovid Butler. Members of the NPA committee were Dr. Merriam, William P. Wharton, Frederick Law Olmsted Jr., and Wallace W. Atwood. In essence, the leading lights of the American conservation community were looking for language that would go beyond the NPS Organic Act to ensure that the NPS would protect the wilderness values of the Everglades.

¹⁵⁷ The position was first offered to Newton Drury, executive director of the Save-the-Redwoods League, but he declined. Swain, 230–32.

¹⁵⁸ Chronology, Everglades National Park—Florida, EVER 22965; L. W. Douglas, Dir., Bureau of the Budget, to SOI, June 10, 1933, NARA II, RG 79, NPS CCF, box 232; Ernest F. Coe to Gov. David Sholtz, Gov. Scholtz papers, box 40.

Wallace Atwood proposed a rather long-winded amendment in April 1933:

A considerable part of the Everglades area might be shut off from all but the most exceptional use or penetration. Other areas could be open for entrance by special canoe paths or trails, largely or entirely under guidance of regularly authorized persons. Carefully selected areas so situated as to give a view of features of great interest would be entered by good roads and well-constructed trails open to all visitors without guides, but under stringent regulations as to injury of plants and animals. The regions open to the whole public should be chosen for their special interest, and the approaches carefully planned on the basis of biological and landscape studies.¹⁵⁹

Olmsted, while in favor of a statement of general policy regarding preservation of wilderness conditions in the authorizing legislation, believed there was not nearly enough scientific knowledge of the area to justify “*detailed* and *specific* limitations” on development in the law [Olmsted’s emphasis].¹⁶⁰ By July 1933, the NPA committee was proposing:

It is the intention of Congress that the greater portion of the Everglades Park shall be permanently preserved as a wilderness area, and that no development of the project or any plan for the entertainment of visitors should be undertaken which will interfere with the preservation of the unique flora and fauna, and the essentially primitive natural conditions now prevailing in this area.¹⁶¹

¹⁵⁹ Wallace W. Atwood to NPA committeemen, Apr. 10, 1933, JCM papers, box 14.

¹⁶⁰ Frederick Law Olmsted Jr. to William P. Wharton, Apr. 11, 1933, JCM papers, box 137.

¹⁶¹ Ernest F. Coe to Augustus E. Houghton, July 11, 1933, Gov. Sholtz papers, box 40.

This version clearly shows the hand of Olmsted, who preferred general, positively stated guidelines, rather than specific prohibitions. With some minor edits, this became Section 4 of the authorizing act (see Appendix A for the full text of the act). It is of interest that Olmsted by this point was convinced that Coe's proposed scenic highway along the coast was a mistake, believing it would introduce "an unbroken zone of sophistication completely interrupting the continuity of primitive conditions."¹⁶²

The House Committee on Conservation of Wild Life held hearings on the Everglades bill on March 19, 1934. The AFA testified that its support of the bill was contingent on the addition of Section 4. The AFA was backed up in this stance by the NPA, the Garden Clubs of America, and Dr. Henry Baldwin Ward. Director Cammerer and Secretary Ickes soon gave their approval to Section 4 as well. Although both believed that the section was not needed, viewing it as nothing more than a restatement of the principles of the NPS Organic Act, they also surely understood that there would be howls of protest from the conservation community if the language were not included. In addition, Director Cammerer verbally consented to the appointment of "representatives of interested organizations as a committee advisory to the National Park Service on selection of lands to constitute the national park."¹⁶³ Some legislators, however, kept up their opposition to the end. Congressman Allen Treadway, a Massachusetts Republican, quipped, "You can't get there any other way [than swimming]. And if you swim, there will be alligators hanging on to your legs, and snakes after your body." In spite of these aspersions, the Everglades bill passed the House on May 24, 1934. On May 30, 1934, President Roosevelt signed into law the act authorizing the eventual establishment of Everglades National Park as P.L. 73-267, with a maximum boundary embracing 2,164,480 acres (3,382 square miles) (Figure 3-10, pen used by President Roosevelt to sign 1934 authorization act).¹⁶⁴



Figure 3-10, pen used by President Roosevelt to sign 1934 authorization act

¹⁶² Frederick Law Olmsted Jr. to Ovid Butler, May 1, 1933, JCM papers, box 137.

¹⁶³ It took more than ten years for the state of Florida and the DOI to agree on a minimum park boundary. By then, both the NPS and the NPA had new leaders and Cammerer's commitment to an advisory committee seems to have been forgotten.

¹⁶⁴ G. H. Collingwood, American Forestry Assn., to Mrs. William A. Lockwood, Garden Clubs of America, Mar. 28, 1934, JCM papers, box 70; Dir. Cammerer to Asst. Solicitor Poole, Apr. 2, 1934, SOI Ickes to Louis R. DeRouen, Chair, House Committee on Public Lands, Apr. 9, 1934, NARA II, RG 79, NPS CCF, boxes 232, 233; P.L. 73-267; Sen. Duncan U. Fletcher to Augustus Houghton, May 28, 1934, Houghton papers, box 23; NPA Executive Committee Meeting Minutes, Apr. 5, 1934, NPCA papers, series 1, box 13.

Ernest F. Coe was in Washington almost continuously from February 18 to June 30, 1934, consulting with NPS officials and lobbying Congress to pass the Everglades act. At times, Director Cammerer believed that Coe was doing more harm than good by personally lobbying legislators. At one point, he wrote Coe that “we do not think it advisable to broadcast letters of this sort to Congress at this time. All is going well with the project and we are anxious that it be not complicated as a result of propaganda.” Coe nonetheless buttonholed legislators in the Capitol’s elevators and in late March sent a three-page letter to every member of Congress. Coe had incredible energy and perseverance, but he failed to understand that at some points in the legislative process, silence was the best tactic. Shortly after the act’s passage, former NPS Director Horace Albright paid tribute to Coe in these words, “[W]hen the history of this great new park is written your name must be at the head of the list of those who worked for its establishment. I have never seen such devotion to a cause as you lavished on the preservation of the Everglades.” Coe, however, was not entirely satisfied. Three months after the law passed, in August, he wrote Director Cammerer pleading to have “Tropic” restored to the name of the park. Associate Director Demaray gave a patient reply, citing five reasons why this was not possible, among them that it would require another act of Congress.¹⁶⁵

¹⁶⁵ Dir. Cammerer to Ernest F. Coe, Feb. 2, 1934, NARA II, RG 79, NPS CCF, box 922; Ernest F. Coe Report to ENPA Executive Council, Nov. 1, 1934, Dir. Horace Albright to Ernest F. Coe, July 9, 1934, Gov. Sholtz Papers, box 40; Ernest F. Coe to Dir. Cammerer, Aug. 1, 1934, acting Dir. A. E. Demaray to Ernest F. Coe, Aug. 8, 1934, NARA II, RG 79, NPS CCF, box 233; “House Votes to Make U.S. Park Out of Florida ‘Alligator Farm,’” *Washington Post*, May 25, 1934.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 4:
The Long and Winding Road to Park Establishment

Chapter 4: The Long and Winding Road to Park Establishment

With the passage of the authorizing act for Everglades National Park in May 1934, the scene of action shifted from Washington, DC to Florida. Section 1 of the act stipulated that no federal funds were to be appropriated for land acquisition. Land could be acquired only by donation from the state or from private parties. Additionally, the secretary of the interior would not accept land for the park on a piecemeal basis. The park would be considered established only when the state had assembled sufficient acreage that in the aggregate was acceptable to the secretary for administration as a national park. About 20 percent of the land within the maximum authorized boundary was state owned. Among the state's holdings were 99,200 acres in Monroe County that had been set aside in 1917 as a reservation for the use of the Seminole Indians.¹⁶⁶ Some 50,000 acres already belonged to the federal government. In October 1934, President Franklin Roosevelt issued an executive order that removed all federally owned land within the boundary from sale or settlement so that it would remain available when the park was ultimately established.¹⁶⁷ The Model Land Company, the Collier Corporation, and the Chevelier Corporation owned the great majority of the private holdings, but there were hundreds of small holders. The typical procedure for acquiring private land for a national park was for a state to set up a commission with authority to accept donations and purchase land. This procedure had been followed in acquiring land for Great Smoky Mountains National Park on the Tennessee/North Carolina border and Big Bend National Park in Texas. The NPS, the ENPA, and other park proponents expected the Florida legislature to establish such a commission at an early date.

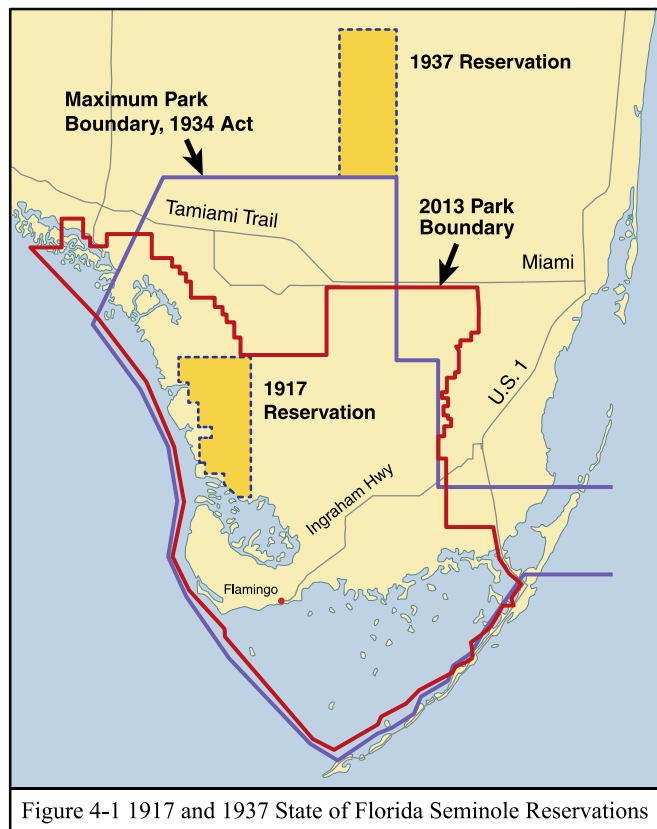
Park proponents were optimistic about the prospects for land acquisition, in large part because of the attitude of Florida's governor, David Sholtz, who held the office from January 1933 to January 1937. Sholtz was a Daytona Beach lawyer with little political experience who had made many contacts as head of the Florida Chamber of Commerce. He was a long-time park advocate and had served as vice president of the ENPA. Ernest Coe and others were also confident that wealthy individuals, both from Florida and other states, would make substantial cash donations for land acquisition. Sholtz succeeded in getting several park-related laws enacted by the 1935 session of the state legislature. One act, which amended a 1929 law that had never gone into effect, established the Everglades National Park Commission (Sen. 958) and a second appropriated \$25,000 for the first two years of the commission's operations, ending June 30, 1937 (Sen. 955).¹⁶⁸ A separate act authorized the trustees of the IIF to convey to the U.S., at their discretion,

¹⁶⁶ Chapter 7310, Laws of Florida, Acts of 1917.

¹⁶⁷ Executive Order 6883, Oct. 22, 1934, CP, EVER 22547.

¹⁶⁸ The Everglades National Park Commission had been previously authorized by legislation passed in 1929, but the operation of the law was suspended until Congress passed its 1934 authorizing act. Until 1969, the Florida legislature met only in odd-numbered years. Sholtz had to wait until the 1935 session to make changes to the commission's powers and organization and ask for an appropriation for its operations.

any state-owned land for inclusion in the park. This law further authorized the IIF to exchange land it owned outside the park boundary for privately owned lands within the boundary (Sen. 957). Once an exchange was completed, the IIF could then convey the exchanged land to the federal government. Another act (Sen. 954) empowered the IIF to eliminate the Seminole Indian Reservation in Monroe County, as soon as it had provided a tract “of approximately equal size and of suitable character” north of the proposed park boundary (figure 4–1, Seminole reservations, 1917 and 1937).¹⁶⁹ Finally, the legislature passed a law declaring the area within the authorized park boundary to be a wildlife preserve (Sen. 956). No funds were provided for marking or patrolling the area, however, so this act was essentially unenforceable.¹⁷⁰



¹⁶⁹ The legislature in 1937 established a 100,000-acre reservation in Broward County for the Seminoles. A more detailed discussion of the effect of the park on the Seminole Indians appears in Chapter 19.

¹⁷⁰ Ernest F. Coe to M. I. Montgomery, Florida State Planning Board, Dec. 31, 1936, CP, EVER 19674a.

Under the act of June 1935, the Everglades National Park Commission (ENPC) was to have 12 members, all Florida residents, appointed to four-year terms by the governor. The members were to elect a chairman from among their ranks. In addition to the chairman, there was an executive chairman, who was to be a commission member selected by the governor. The governor was also to select an executive secretary, who did not have to be a commission member. The executive chairman was allowed to hire a secretary. Three salaried positions were mentioned in the act: the executive chairman (not to exceed \$4,000 a year), the executive secretary (not to exceed \$2,500 per year), and the secretary to the executive chairman (not to exceed \$1,680 per year). The commission had authority to fill other posts, within the limits of its appropriations. The commission members received no pay, but they were entitled to reimbursement for travel expenses.¹⁷¹

Ernest Coe apparently suggested to Governor Sholtz the idea of having a chairman, which was conceived as an honorary position, and an executive chairman. Coe saw the chairman as being the public face of the commission, promoting the project at every opportunity, while the executive chairman had day-to-day responsibility for the commission's work. The legislature authorized the commission to take title to any lands that the secretary of the interior might designate for the national park and gave it the power of eminent domain. The 1929 act had empowered the ENPC to absorb the ENPA, but the 1935 act directed the commission to work in cooperation with the association. It was apparent in 1935 that the association would be able to undertake activities that a state agency could not; thus, it made sense for the ENPA to continue with a separate identity.¹⁷²

¹⁷¹ S. 958, June 7, 1935.

¹⁷² Ernest F. Coe to Lorenzo A. Wilson, CP, EVER 22382.

The Everglades National Park Commission

Even before the legislature had defined the powers of the Everglades National Park Commission and funded it, Governor Sholtz was seeking input on its composition. Ernest Coe expected to be named executive chairman and was among those who suggested names to the governor for other members. Governor Sholtz appointed the following commission members on April 30, 1935:

Ernest F. Coe, landscape architect and executive chairman, ENPA,
Coconut Grove
Lorenzo A. Wilson, fertilizer company executive, Jacksonville
D. Graham Copeland, Collier Corporation executive, Everglades City
J. W. Hoffman, Model Land Company executive, St. Augustine
May Mann Jennings, clubwoman and activist, Jacksonville
Norberg Thompson, commercial fisherman, Key West
William H. Porter, bank officer and Monroe County Commissioner, Key West
Thomas J. Pancoast, real estate and hotels, Miami Beach
Mrs. T. V. Moore, clubwoman, Miami
A. L. Cuesta Jr., cigar manufacturer, Tampa
John O. Shares, hotelier, Sebring
Hamilton Holt, president, Rollins College, Winter Park

Sholtz appointed Coe executive chairman, and the commission members later elected Thomas Pancoast as chairman. Coe recommended J. S. Alexander, a Tampa biologist who had worked in Yellowstone National Park, as executive secretary, and the governor made that appointment. Coe had advised Sholtz not to appoint anyone to the commission who owned land or represented land owners within the authorized boundary. The governor, however, must have felt that such a course was politically impossible because three of his appointments fell into that category. The Model Land Company, represented by Hoffman, owned 136,466 acres; the Collier Corporation, represented by Copeland, owned 151,000 acres; and Jennings, through the Dade Muckland Company, owned 2,170 acres.¹⁷³

As of May 1935, Ernest Coe was executive chairman of both the ENPA and the ENPC. As a private association, the ENPA was committed to the rapid establishment of an Everglades National Park with the maximum boundary specified in the 1934 federal law. As an official agency of the State of Florida, the ENPC had the responsibility of representing all of the state's people, ensuring the wise use of state funds, and reconciling competing interests. Many of those competing interests—the tourist industry, land

¹⁷³ Ernest F. Coe to Gov. Sholtz, Mar. 20, 1935, and July 1, 1935, Gov. Sholtz papers, box 42; J.P. Newell, secretary to Gov. Sholtz, to Ernest F. Coe, Aug. 16, 1935, CP, EVER 21859.

owners, commercial fishermen, and conservationists—were represented on the ENPC. Temperamentally, Coe was much better suited to the role of high-principled, uncompromising park proponent than the role of executive chairman of a state commission that had to satisfy multiple constituencies. His position with the ENPC also demanded administrative abilities and diplomatic skills that were not Coe’s strong suits.

The ENPC placed a major emphasis on the benefits to Florida’s tourism industry of a national park in the Everglades. The park’s location at the toe of the Florida peninsula meant that motorists visiting the park would have to travel the length of the state coming and going, scattering dollars among hotel and restaurant owners along the way. A map distributed by the commission explicitly made that very point (figure 4–2, Everglades National Park Commission map touting tourism prospects).



Figure 4–2, Everglades National Park Com

The first two major tasks confronting the ENPC were recommending a boundary for the park and preparing abstracts of title for the private holdings within that boundary. The preparation of abstracts of title was the first step in the process of land acquisition. The abstracts were to be used in subsequent appraisals of land and negotiations with land owners. A final decision on an acceptable boundary was in the hands of the secretary of the interior, but the NPS expected to work closely with the ENPC in determining a boundary that would both meet NPS requirements and be politically acceptable in Florida. In Secretary Wilbur's December 1930 letter to Congress, he expressed some doubt about whether acreage north of the Tamiami Trail should be included in the park, and Director Horace Albright expressed similar uncertainty in his correspondence. In part, this was because the NPS had not studied the attributes of the 2 million acres in Coe's proposed boundary. The Wilbur letter described the boundary that accompanied his report as "a very definite starting point" and indicated that a satisfactory minimum boundary might embrace 80 percent of the 1.3 million acres included in his proposal.¹⁷⁴

Ernest Coe waited six months to hold an organizational meeting of the ENPC. May Mann Jennings, for one, feared that he was letting momentum slip away.¹⁷⁵ On January 15, 1936, nine of the twelve members met in Miami, electing Thomas Pancoast as chairman and Lorenzo Wilson as vice chairman. The commission established four committees, with the following membership:

Finance Committee: William R. Porter, Lorenzo Wilson, A. L. Cuesta Jr.,
Norberg Thompson, John O. Shares

Lands and Boundaries Committee: D. Graham Copeland, J. W. Hoffman, William
R. Porter

Legislation Committee: John O. Shares, May Mann Jennings, D. Graham Copeland

Public Relations Committee: Dr. Hamilton Holt, Mrs. T. V. Moore, Norberg
Thompson

Coe and Pancoast were made ex-officio members of all committees. The finance committee was responsible for handling cash donations, government appropriations, and disbursements to land owners.¹⁷⁶ The lands and boundaries committee had a key responsibility, since it was already apparent that some Floridians would object to the maximum boundary in the 1934 law. Placing representatives of the two largest land

¹⁷⁴ Wilbur, *Report*, Dec. 3, 1930, 10.

¹⁷⁵ May Mann Jennings to Ernest F. Coe, Oct. 23, 1935, CP, EVER 19886.

¹⁷⁶ ENPC Organization Meeting Minutes, Jan. 15, 1936, CP, EVER 19420b.

owners, the Model Land Company and the Collier Corporation, on this committee was almost a guarantee of future controversy.

There were some minor changes in commission members and staff in the first two years of its operation. Lorenzo Wilson died in September 1936 and was replaced by Frank Dominick of Miami Beach. President Holt of Rollins College resigned after the December 1936 ENPC meeting and was replaced by Michael Sholtz of West Palm Beach, the governor's father. In June 1936, Coe asked Governor Sholtz to remove Alexander as the commission's executive secretary. Alexander was actively campaigning in the Democratic primary election, and Coe believed the commission needed to be above politics. Alexander was persuaded to resign, and in August 1936, Sholtz appointed Benjamin Axleroad, a Miami lawyer, as a replacement. Axleroad later recalled that he found Coe as a boss "like the Pharaohs [*sic*] of Egypt."¹⁷⁷

The work of preparing abstracts of title began in August 1935 and continued for several years. As chief abstractor, the commission hired J. H. Meyer, who proved energetic and efficient. Title companies in Dade County provided access to their files without charge, and the ENPC was able to tap almost \$9,000 in Federal Emergency Relief Administration and Works Progress Administration funding for salaries. The ENPC employed four typists, mostly occupied with the title work; critics were not shy in pointing out that the state attorney general's office managed to get by with just two. Although the abstracts were a necessary first step, criticism was soon being leveled at the commission for failing to mount a fundraising campaign for land purchases. The main reason that the commission failed to move rapidly into fundraising activities, however, was the presence of sharp differences between Ernest Coe and the majority of the commission on the question of an acceptable park boundary.¹⁷⁸

¹⁷⁷ Ernest F. Coe to Gov. Sholtz, June 14, 1936, Ernest F. Coe to ENPC members, Aug. 18, 1936, Ernest F. Coe to ENPC members, Dec. 31, 1936, Meeting of ENPC, Apr. 4, 1937, 15, Meeting of ENPC, Jan. 11, 1937, CP, EVER 19463, EVER 19382b, EVER 19390, EVER 19427a, EVER 19391b; Benjamin Axleroad to Spessard Holland, Oct. 23, 1940, SLH papers, box 95.

¹⁷⁸ Ernest F. Coe to Gary D. Landis, FL AG, Mar. 4, 1937; May Mann Jennings to Gov. Cone, June 5, 1937, Gov. Cone Papers, box 30.

Determining a Minimum Acceptable Park Boundary

Director Cammerer had dispatched an NPS team to Florida to study the boundary question in December 1934. It consisted of Harold C. Bryant, assistant director; Roger W. Toll, Yellowstone superintendent; Oliver G. Taylor, deputy chief engineer; and George M. Wright, chief of the wildlife division. The team spent five days in the area and made its report to Cammerer on January 14, 1935. Its basic conclusion was that “only an approximation of the maximum boundary as set can fulfill conservation requirements and consequently approval of any material reduction in size must be avoided.” The team emphasized the need to include within the park the sizable portions of Key Largo and Old Rhodes Key and acreage north of the Tamiami Trail specified in the original maximum boundary. As to the latter area, it noted that “[a]ny commercial development of this area involving drainage would injure the region to the south.” The team recommended excluding from the park the rights-of-way of the Florida and East Coast Railway and the Key West Highway (State Route 4A at the time, later U.S. 1). The report noted that “minor adjustments to the boundary lines” would be acceptable. Cammerer discussed the team’s recommendations with representatives of major conservation organizations. Secretary Ickes then wrote to Governor Sholtz on April 3, 1935, stating that the original boundary, encompassing 2,000 square miles, subject to minor adjustments, would be acceptable to the federal government. Ickes urged the state to proceed rapidly in acquiring the necessary lands for the park.¹⁷⁹

The Lands and Boundaries Committee of the ENPC convened an open meeting in Miami on June 27, 1936, to get public input on the boundary issue. D. Graham Copeland, the committee chair, presided and Ben H. Thompson, special assistant to the NPS director, was present. The meeting was well attended, drawing many land owners, commercial fishermen, and representatives of sportsmen’s groups. Attendees raised several strong objections to the maximum boundary. The Izaak Walton League of Dade County, representing its 400 members, wanted the area north to the Tamiami Trail excluded as valuable hunting grounds and all of Florida Bay excluded because of its worth to commercial and sportfishermen. The league said it could support only a much smaller park, of about 930 square miles, confined entirely to the mainland. Fearing for their livelihoods, spokesmen for the commercial fishing and sponging industries wanted none of the waters of the Gulf or Florida Bay included in the park. William Albury, attorney for the Monroe County Board of Commissioners, presented the county government’s position that none of the keys should be part of the park. He pointed out that the county had agreed to give up all of its acreage on the mainland and argued that if portions of Key Largo were also made part of the park that the tax burden on the rest of the county would

¹⁷⁹ Harold C. Bryant to Dir. Cammerer, Jan. 14, 1935, CP, EVER 22200; Dir. Cammerer to Ernest F. Coe, Jan. 15, 1935, Gov. Sholtz papers, box 41.

be onerous. Land owners were divided in their opinions. Some were willing to sell to the government, but all were concerned about getting full and fair value for their property. The Florida Federation of Garden Clubs testified in favor of the original park boundary. Following the public meeting, the Lands and Boundaries Committee began preparation of a report for the entire ENPC.¹⁸⁰

The vehement opposition to the maximum boundary in Monroe County presented a serious problem for the park project. Already in April 1937, Director Cammerer had attempted to reassure the Monroe County Fishermen's Association, writing:

The National Park Service has no intention of imposing regulations relating to commercial and sport fishing within the Everglades National Park area, other than those contained in Florida State laws, or county laws in the event the latter exist.¹⁸¹

ENPC member D. Graham Copeland "preached Mr. Cammerer's letter from one end of the County to the other," hoping to quiet protests from one thousand commercial fishermen. Coe met with the Monroe County Commissioners, trying to persuade them that any tax revenues lost by the inclusion of Key Largo acreage in the park would be more than made up by the increased tax revenues that would come from the development of adjacent county lands once the park was attracting one million tourists a year.¹⁸² Coe had difficulty in believing that there could be honest differences of opinion over what was best for Florida regarding the park. He tended to believe that opposition to his ideas originated either in ignorance or purely selfish motives. Coe therefore spent a great deal of time trying to explain again and again the facts that he believed made his conception of the park boundary the only correct conception. In this, he tried the patience of many and alienated not a few.

The conflicts over a boundary and the problematic dual role of Ernest Coe with the ENPC and the ENPA dominated the second meeting of the full ENPC in December 1936. Copeland maintained that he had attempted to get an earlier meeting to present the Lands and Boundaries Committee report, which was prepared in October, but that Coe put him off. The committee's report contended that a reduction in the maximum boundary was essential to secure the cooperation of "powerful interests in the social, business and political worlds." Specifically, the report recommended the exclusion of 45,799 acres in the Turner River area of Collier County, arguing that this was valuable as agricultural

¹⁸⁰ ENPC Lands and Boundaries Committee Meeting Minutes, June 27, 1936, CP, EVER 19423.

¹⁸¹ Dir. Cammerer to Chester Thompson, Monroe County Fishermen's Association, Apr. 28, 1937, NARA II, RG 79, NPS AF, box 919.

¹⁸² Meeting of ENPC, Apr. 3, 1937, 49, CP, EVER 19427a; "Everglades Park Denied Keys Area," *Miami Herald*, June 17, 1936.

land and that the river held great promise as an avenue of navigation. In addition, the committee believed that the Turner River country offered nothing to a visitor that was not present in river valleys farther to the south. In Monroe County, the report proposed excluding all “bays, water bottoms and islands, amounting to 27,644 acres.” The committee fully supported the political leaders of the county on this. In Dade County, the report recommended a reduction of 115,200 acres. This reduction comprised marl lands in the eastern portion of the proposed park that could be drained for agriculture. The committee argued that even with the reductions, the essential natural features of the area would be included in the park. In presenting the report to the full ENPC, Committee Chair Copeland stressed that the 1930 letter from the secretary of the interior had indicated that something like 80 percent of the full 2,000 square miles could well be acceptable for establishing the park.¹⁸³

Copeland, as chair of the Lands and Boundaries Committee, led the discussion of the committee’s report. Copeland sharply criticized the actions of Ernest Coe on behalf of the ENPA, which he believed undercut the position of his committee. Copeland argued that while Coe kept the ENPC’s Lands and Boundaries Committee at arm’s length, his ENPA pumped out propaganda favoring the maximum park boundary and published gross underestimates of the cost of acquiring the private holdings. Copeland’s charges were not without foundation. Coe had written confidentially to Director Cammerer in June 1936 to warn him that the Lands and Boundaries Committee wanted a “radical curtailment” of the boundary. He thought that there was “a definite set up” among the Collier Corporation, the Model Land Company, and Key Largo land owners to whittle down the boundary. Hoping to circumvent Copeland, Coe suggested that the NPS work with the Roosevelt administration to approach Barron Collier directly. During the December 1936 meeting, May Mann Jennings supported Copeland and suggested that Coe needed to give up one of his positions. She was eager to get the boundary questions resolved so that fundraising for land acquisition could begin. She also noted that approval of a minimum boundary would not prevent additional tracts being added to the park in the future. In a remark clearly directed at Coe, Jennings observed, “We can’t dream—we have got to face realities.” After considerable discussion, the commission voted by a margin of eight to three to have the Lands and Boundaries Committee report presented to the NPS as the basis for discussions on an acceptable boundary. The no votes came from Coe, Pancoast, and Dr. Holt.¹⁸⁴

In January 1937, an NPS delegation headed by Director Cammerer went to South Florida to make further investigation of the boundary issue and to meet with members of the

¹⁸³ “A Report to ENPC by Committee on Lands and Boundaries Relative to Boundaries for Proposed Everglades National Park,” Oct. 19, 1936, CP, EVER 19424; Wilbur, *Report*, Dec. 3, 1930.

¹⁸⁴ Meeting of ENPC, Dec. 2, 1936, CP, EVER 19387a; Ernest F. Coe to Dir. Cammerer, June 2, 1936, CP, EVER 20404; Ernest F. Coe to Dir. Cammerer, June 29, 1936, CP, EVER 20416.

ENPC. George A. Moskey, assistant director, lands and use; Dr. H. C. Bryant, assistant director, research and education; and Ben H. Thompson, special assistant to the director, were the other members of the delegation. Augustus S. Houghton, a prominent conservationist associated with the Camp Fire Club and a long-time friend of Cammerer, was also part of the team. The NPS group spent the better part of a week touring the Everglades area, including three days in and around Turner River. Director Cammerer then attended a meeting of the ENPC on January 11, 1937.¹⁸⁵

At the meeting, Director Cammerer led off by describing the process of land acquisition in other park projects. He stressed that a decision on a minimum boundary was critical, noting that the ENPC had “not gathered a single dollar of funds” for land acquisition. He defined the goal as deciding on “the smallest workable unit and get[ting] funds for it.” Turning to specifics, Cammerer pushed for the inclusion of a portion of Key Largo, believing that an example of key geology and coral reefs needed to be part of the park. He indicated that the NPS could give up the Turner River country, if it was assured of having the Lopez River and some shell mounds lying between Turner River and Lopez River. Cammerer had previously made this commitment to Barron Collier, who had strong ties to the Roosevelt Administration. He also seemed willing to compromise on lands along the eastern boundary on the mainland, stating that “we don’t want to take any land that is more valuable for agricultural purposes.” The director went out of his way to reassure commercial fishermen and spongers that the NPS would not interfere with their activities. At this point, William Porter, who was a Monroe County Commissioner, pointed out that fisherman had been greatly alarmed when the first superintendent of Fort Jefferson National Monument had closed its waters to fishing.¹⁸⁶ Cammerer said he would look into that question but that it should not be viewed as a precedent for the Everglades situation. The director thanked the Lands and Boundaries Committee for its work and said he was now prepared to return to Washington and make a recommendation to Secretary Ickes on a minimum acceptable boundary.¹⁸⁷

At the January ENPC meeting, Copeland again complained of the activities of the ENPA, stating that it had “[b]rought more enemies to the Park than they ever begin to realize.” William Porter and May Mann Jennings pointed out that there was a conflict of interest in having Ernest Coe as executive chairman of both the ENPA and the ENPC. Jennings noted that a new governor, Fred P. Cone, had just been inaugurated at Tallahassee, remarking “if we don’t get down to the job, you will see what Governor Cone will do.”¹⁸⁸

¹⁸⁵ ENPC Meeting Minutes, Jan. 11, 1937, CP, EVER 19391b.

¹⁸⁶ President Franklin D. Roosevelt established Fort Jefferson National Monument on January 4, 1935. On October 26, 1992, the fort and surrounding areas were redesignated the Dry Tortugas National Park.

¹⁸⁷ ENPC Meeting Minutes, Jan. 11, 1937, CP, EVER 19391b, 9, 12–13, 29–33.

¹⁸⁸ ENPC Meeting Minutes, Jan. 11, 1937, 15–16, 38, CP, EVER 19391b.

On February 9, 1937, Director Cammerer notified Thomas Pancoast, chair of the ENPC, of his boundary recommendations to Secretary Ickes. Pancoast in April asked Cammerer to delay the issuance of Secretary Ickes's letter to Governor Cone on an acceptable minimum boundary until after the Florida legislature had adjourned.¹⁸⁹ The legislature was considering the commission's budget request. Pancoast feared that once the Monroe County delegation learned the details of the minimum boundary, it would turn against the ENPC. Ickes was in the area of the park in April, on a fishing and inspection trip in the company of Harry Hopkins, who headed the Works Progress Administration. Ickes used the trip to make his own assessment of Cammerer's recommendations and ended up delaying his letter to the governor until August 13, 1937. In his letter, Ickes accepted all of Cammerer's recommendations. The department of interior was willing to accept the Lopez River as the northwest water entrance to the park, giving up the Turner River country. Ickes also agreed to the exclusion of areas of potential agricultural worth west and south of Homestead. The department compromised on the keys, agreeing to accept a smaller portion of Key Largo than the 1930 boundary embraced. The secretary insisted that Florida Bay was an essential part of the park, largely because it was the habitat of many birds and marine animals. Ickes closed his letter by stating "the time has now come when the State may aggressively proceed with its program of acquiring the land."¹⁹⁰

The Administration of Governor Fred P. Cone

May Mann Jennings's political instincts about incoming Governor Cone turned out to be on target. Fred P. Cone, a Lake City farmer, lawyer, and banker, had been president of the state senate in the 1910s. Facing thirteen opponents in the first round of the Democratic primary, he prevailed in the second round in May 1936 and assumed office on January 5, 1937. Cone ran on a platform of strict economy in state spending and no tax increases. Cone was a down-to-earth, folksy product of North Florida, which was his primary political base. It was obviously important for the ENPC and park proponents generally to establish good relations with Cone, especially since the state legislature was to convene shortly after he took office and would be making appropriations for the commission. Coe traveled to Tallahassee in February 1937 and met briefly with Cone. The two men's contrasting reactions to the meeting are very revealing. Coe reported that the governor was "extremely affable" and very interested in the park project.¹⁹¹ Cone later wrote of this meeting:

¹⁸⁹ Until 1969, the Florida legislature met only every other year (odd numbered years) in the spring.

¹⁹⁰ Dir. Cammerer to Thomas J. Pancoast, Feb. 9, 1937, CP, EVER 20453a; Thomas J. Pancoast to Dir. Cammerer, Apr. 6, 1937, CP, EVER-20785; SOI Ickes to Gov. Cone, Aug. 13, 1937, NARA Ph, RG 79, 79-67-A-1022, box 22; "Ickes, Hopkins on Fishing Trip," *Daytona Beach News Journal*, Apr. 13, 1937.

¹⁹¹ David R. Colburn and Richard K. Scher, *Florida Gubernatorial Politics in the Twentieth Century* (Tallahassee: University Press of Florida, 1980), 71-72, 281; Ernest F. Coe to John O. Shares, Mar. 1, 1937, CP, EVER 21115.

Of course you know I talked with Mr. Ernest F. Coe, but he would run me crazy in thirty minutes, so I will be glad when the Association comes up here [Tallahassee] if they will leave him home, because he gives me the jim-jams.¹⁹²

During the first half of 1937, it became increasingly apparent that Governor Cone had serious reservations about the Everglades National Park project and the operations of the ENPC. The commission met in April to hammer out a budget proposal for the period from July 1, 1937, to June 30, 1939, to present to the legislature. Knowing that the governor and legislature were keen to reduce expenditures, the commission made reductions where it could, but they still ended up requesting \$87,760, or \$43,880 a year. In discussing the appropriate ENPC member to send to Tallahassee to lobby, Jennings warned that “it would be poison” to send Coe. At the end of the April meeting, a motion was passed to have the commission meet monthly in the future. When the commission met again in early May, William Porter reported that the governor had vowed not to raise taxes and that the legislature seemed to lack leadership. The commission decided that it was imperative to have a member present in Tallahassee through the end of the legislative session to safeguard the ENPC’s interests. Jennings reluctantly agreed to go to Tallahassee, promising to keep in close touch with the other members and to ask for a meeting of the full commission in the capital if it seemed desirable.¹⁹³

Once in Tallahassee, May Mann Jennings did everything she could to get the commission’s appropriation passed, contacting thirty-seven of the thirty-eight state senators and more than half of the representatives. She also met with Governor Cone and reported him to be “very sore” about the \$4,000 salary of the executive chairman and skeptical of the need for an executive secretary and four typists. The governor wanted to assert his control over the ENPC and told Jennings that he would veto any appropriation for it unless all its members resigned, giving him free reign to reconstitute the commission as he saw fit. Jennings wrote the other commission members that Cone “means exactly what he says.” On June 8, the governor requested the resignation of each commission member, writing “I want to have some say so about where it [the appropriation] is to be spent and how.” The members complied, and the legislature passed the two-year appropriation of \$87,760. Governor Cone signed the bill

¹⁹² Gov. Cone to G. Orren Palmer, Dec. 9, 1937, Gov. Cone papers, box 30. “The jim-jams” is a colloquial expression meaning “the fidgets; nervousness; the ‘creeps’; low spirits” and has been in use since the early twentieth century. Eric Partridge, *A Dictionary of Slang and Unconventional English*, 8th ed. (New York: Macmillan, 1984), 620.

¹⁹³ “Governor’s Message to Florida Legislature,” *Florida Times-Union*, Apr. 7, 1937; Meeting of the ENPC, Apr. 3, 1937, CP, EVER 19427a; ENPC Meeting Minutes, May 3, 1937, CP, EVER 19428.

into law on June 12, but he had no intention of allowing anything close to that amount actually to be disbursed.¹⁹⁴

To get a better handle on the ENPC and the entire Everglades situation, Governor Cone asked a cousin, G. Orren Palmer, a retired lawyer living in Miami Beach, to investigate and report to him. Palmer reported that contrary to rumors, he believed that the ENPC had been quite frugal in its expenditures. He thought that Ernest Coe by far had the most knowledge of the park project and should be retained as executive chairman. Palmer believed it a bad idea to retain anyone on the commission who was a land owner or represented one and that Benjamin Axleroad should be let go. In sum, Palmer recommended that the ENPC be maintained but with a smaller membership and a strictly controlled budget. Cone responded that he felt that the park boundary was too comprehensive and that he refused to tax the people of Florida to buy land for the park. He thought that either the federal government or northern philanthropists should bear the entire cost. Throughout his four years in office, Cone gave vague public assurances that he favored the park's establishment, but in practice he did nothing to bring it about. Augustus Houghton was on point when he wrote to Director Cammerer, "you can expect no help from Governor Cone." Cone's attitude largely stemmed from his belief that a national park in the Everglades would primarily benefit Miami and its environs, where he had few political supporters. Secondly, he was committed to reigning in state expenditures in hard times (figure 4-3, *The Miami Daily News* blasts Governor Cone's attitude, August 2, 1938).¹⁹⁵

¹⁹⁴ Mrs. W. S. Jennings to Thomas J. Pancoast, June 6, 1937, CP, EVER 19938; Mrs. W. S. Jennings to Gov. Cone, June 6, 1937, Gov. Cone papers, box 30; Mrs. W. S. Jennings to ENPC members, June 6, 1937, CP, EVER 19939; Gov. Fred P. Cone to Ernest F. Coe, June 8, 1937, CP, EVER 14604; "\$300,000 Payments under Legislative Acts Are Withheld," *Miami Herald*, Nov. 4, 1937; Senate Bill 707, Florida Acts of 1937.

¹⁹⁵ G. O. Palmer to Gov. Cone, July 14, 1937, Gov. Cone to G. Orren Palmer, July 28, 1937, Gov. Cone papers, box 30; Augustus Houghton to Dir. Cammerer, Oct. 25, 1937, NARA II, RG 79, NPS AF, box 911.

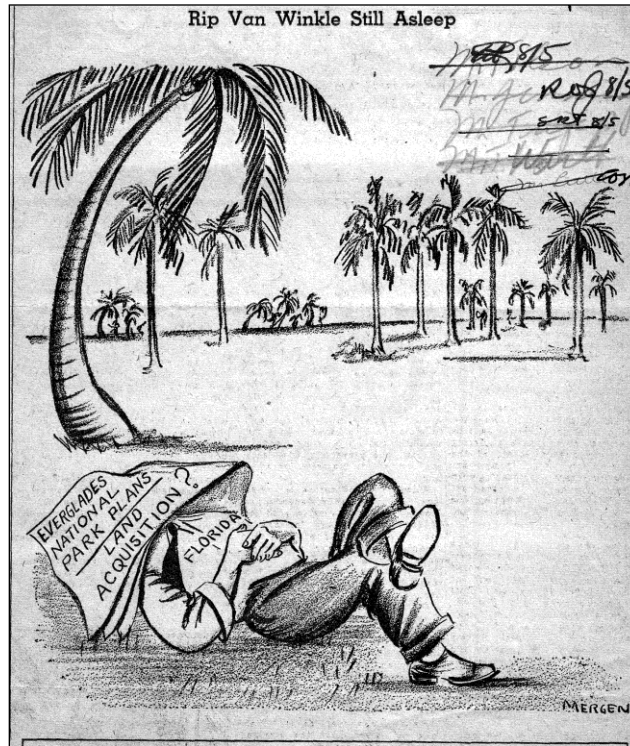


Figure 4-3, The *Miami Daily News* blasts Governor Cone's attitude, August 2, 1938

Governor Cone accepted the resignations of the ENPC members in July but made no new appointments for several months. Jennings asked the governor to appoint her executive chairman, but he declined, naming G. Orren Palmer to the post on November 16, 1937.¹⁹⁶ The position's salary was kept at \$4,000 a year. It seems clear that the governor's objection was to the person who was receiving this salary, not its amount. Cone reappointed G. Graham Copeland, in spite of Palmer's reservations about representatives of land owners, and added four other members: C. J. McElheny, Tampa; I. J. Reuter, Miami Beach; John P. Stokes, Miami; and H. R. Howell, Miami. As Ernest Coe and Benjamin Axleroad interpreted Florida law, they believed that they were authorized to hold on to their ENPC positions and draw their salaries until their successors began their tenure. Coe continued to approve salary vouchers for Axleroad and other employees, but Governor Cone refused to sign off on them. Axleroad pursued a legal case for his back pay. The Florida Supreme Court ruled that he was entitled to his pay but concluded it had no power to compel the governor to authorize payment.¹⁹⁷

¹⁹⁶ Thomas Pancoast believed that Jennings had been angling for the executive chairmanship all along and had a hand in persuading Governor Cone to demand the commissioners' resignations. No other evidence has been found to support this charge.

¹⁹⁷ Ernest F. Coe to Gov. Cone, June 16, 1939, Gov. Cone papers, box 31; Gov. Cone to G. O. Palmer, Nov. 30, 1937, Gov. Cone Papers, box 30; J. H. Meyer to Mr. English, Apr. 5, 1939, CP, EVER 148026; State Legislature Gets Axleroad Case," *Miami Herald*, Apr. 8, 1939.

On another front, Congressman Wilcox succeeded in getting the five-year ban on federal expenditures for park administration, protection, and development removed, with an act passed August 21, 1937 (H.R. 2014). Park supporters hoped that this move would allow CCC camps to be established within the park's proposed boundary. The work at Royal Palm State Park was already completed (see chapter 2), however, and there were no other state- or federal-owned tracts where the CCC could legally operate. Everglades National Park was authorized but not yet established so the removal of the spending ban had little practical effect.¹⁹⁸

The Board of Trustees of the IIF, in consultation with the U.S. Office of Indian Affairs,¹⁹⁹ decided in 1937 to establish a 104,000-acre reservation for the Seminoles in Broward County. This replaced the 99,200-acre Monroe County reservation that the state had decided to donate to the federal government for the national park. The southern boundary of the new reservation abutted the north park boundary under the maximum park boundary of 1930 (see figure 4–1). An unnamed state official described this as “trading virtually nothing for something of the same value.” He characterized the land in Broward County as mostly marsh with a few high spots. The Office of Indian Affairs believed that the Seminoles had never made “any substantial use” of the Monroe County reservation. A 1930 map of Seminole camps shows only one camp within the reservation, that of Ingram Billy. Undoubtedly, the Indians fished, frogged, hunted, and gathered in the reservation, using temporary camps. Newspaper coverage and a statement from the Superintendent of the Seminole Agency indicate that the Seminoles opposed the move to Broward County. They seemed, however, more concerned about having to potentially give up their camps along the Tamiami Trail than losing the Monroe County acreage (see Chapter 18).²⁰⁰

¹⁹⁸ “President Signs Everglades National Park Measure,” *Miami Beach Tribune*, Aug. 27, 1937.

¹⁹⁹ The Office of Indian Affairs within the Department of the Interior became the Bureau of Indian Affairs in 1947.

²⁰⁰ F. C. Elliot, IIF, to Benjamin Axleroad, ENPC, May 21, 1937, cited in Chronology, Everglades National Park—Florida, EVER 22965; “Florida Swaps Indians ‘Nothing for Nothing,’” *Ft. Myers News-Press*, Mar. 7, 1937; Acting Dir. Tolson to Asst. SOI Chapman, Aug. 12, 1938, cited in Chronology, Everglades National Park—Florida, EVER 22965; “War Talk Sweeps Glades as Indians Protest Removal,” *Miami Tribune*, Apr. 11, 1937.

The Park Project in the Doldrums

The park project made little progress during Governor Cone's administration. Cone permitted only about \$19,000 of the \$87,660 appropriation from 1937 to be expended; much of this went for his cousin's salary as executive director of the ENPC. NPS Director Cammerer was again in South Florida in December 1937 for a joint meeting of the ENPA and the ENPC. Twice in the summer of 1939, Secretary of the Interior Ickes met with Palmer, who had been reappointed executive director in April. As time passed, Ickes was increasingly impatient and vocal in urging the state to move forward with land acquisition. Florida's newspaper editors began to attack Governor Cone for his lack of interest. Even Palmer, Cone's hand-picked ENPC executive director and near relation, seemed to have difficulty in getting the governor's attention, referring to the "none too definite" nature of their conversations on the park project. The *Orlando Sentinel* noted with some disgust that Palmer would be lucky to get the commission's postage expenses covered by the state.²⁰¹

Reporting on a meeting that he had with Secretary Ickes in the summer of 1939, Palmer noted that the blunt-spoken secretary's "opening remark was to the effect that it was inconceivable why the State of Florida had done so little in furthering the Everglades National Park project, and that unless the State showed more interest, the Federal Government would soon abandon the project."²⁰²

Director Cammerer confessed that he had worries about the Everglades but was willing to wait, writing in December 1938:

Governors come and go and where one Governor has the vision, another lacks it. The next Governor may be more favorable. . . . I feel that the project just can't be permitted to fail, even should it have to be cut down in area as a last resort. I am not breathing this last as a possibility, but we may come to it sooner or later, rather than have the project fail.²⁰³

²⁰¹ "State Legislature Gets Axleroad Case," *Miami Herald*, Apr. 8, 1938; G.O. Palmer to Gov. Cone, Feb. 2, 1939, Gov. Cone papers; "Affairs of State, *Orlando Sentinel*, Nov. 11, 1937.

²⁰² G. O. Palmer to Spessard L. Holland, Aug. 27, 1940, SLH papers, box 95.

²⁰³ Dir. Cammerer to A. S. Houghton, Dec. 19, 1938, NARA II, RG 79, NPS CCF, box 905.

A typical editorial reaction came from the *Tampa Daily Times* in the last year of Governor Cone's term:

Why Not Get Everglades Park Now, Governor?

This Everglades Park editorial is addressed to Governor Cone and members of the State Cabinet and its point is that the people of Florida have shown as plainly as they can . . . that they want Everglades National Park opened up as soon as possible; so why doesn't the State administration get busy?

The vital preliminary steps should not have to wait until after another governor takes office. Floridans [*sic*] are still expecting Governor Cone to order a real and aggressive effort to secure this park project as soon as possible. All Florida would acclaim such action. How about it, Governor?²⁰⁴

Jacksonville's *Florida Times-Union*, the *Miami Herald*, the *Key West Citizen*, the *Fort Meyers News Press*, the *Melbourne Times*, and the *Lake Wales Highlander* published editorials expressing similar sentiments.

The 1938 NPS Wildlife Reconnaissance Report

A small step forward in the late 1930s was the preparation by the NPS of a fairly detailed report on the plant and animal life of the Everglades. A wildlife technician in NPS Region One, Daniel B. "Dan" Beard, did field work in the Everglades off and on from November 1937 to September 1938.²⁰⁵ The result was a 104-page special report that also included thirty-four photographs and a base map, submitted November 1, 1938 (figure 4-4, Daniel Beard's 1938 *Wildlife Reconnaissance*). Beard noted that he "was able to cover most of the area by foot or boat and to fly over the entire project area a number of times." He cautioned that his report was "by no means a biological survey" but rather a general description of the project area with some discussion of the issues and problems future park managers could expect to confront.²⁰⁶ Dan Beard would later be named Everglades National Park's first superintendent (see Chapter 5).

²⁰⁴ *Tampa Daily Times*, Feb. 13, 1940.

²⁰⁵ Daniel B. Beard was the son of Daniel Carter Beard, who helped to found the Boys Scouts of America and was a noted authority on camping and woodcraft. Daniel B. Beard majored in political science at Syracuse University while taking zoology and biology courses. In 1934, he began an NPS career as a CCC camp wildlife technician, later serving in the NPS Region 1 Office and the Washington Office. Daniel B. Beard later became Everglades National Park's first superintendent, serving from August 1947 to May 1958 (see Chapter 5). Beard went from the Everglades superintendency to become superintendent of Olympic National Park and retired as director of the NPS Southwest Region, headquartered in Santa Fe. Biographical Information for Daniel Beard; undated fact sheet, SFCMC; "Glades Park Chief Loves Outdoor Life," *Miami Herald*, July 27, 1947; personal communication, Albert Beard to Nancy Russell, Mar. 19, 2011.

²⁰⁶ Daniel B. Beard, Asst. Wildlife Technician, to Dr. Carl P. Russell, RDR1, Nov. 1, 1938, transmitting Daniel B. Beard, *Special Report: Everglades National Park Project, Florida, Wildlife Reconnaissance* (Richmond: NPS Region One, 1938) hereinafter cited as Beard, *Wildlife Reconnaissance*.

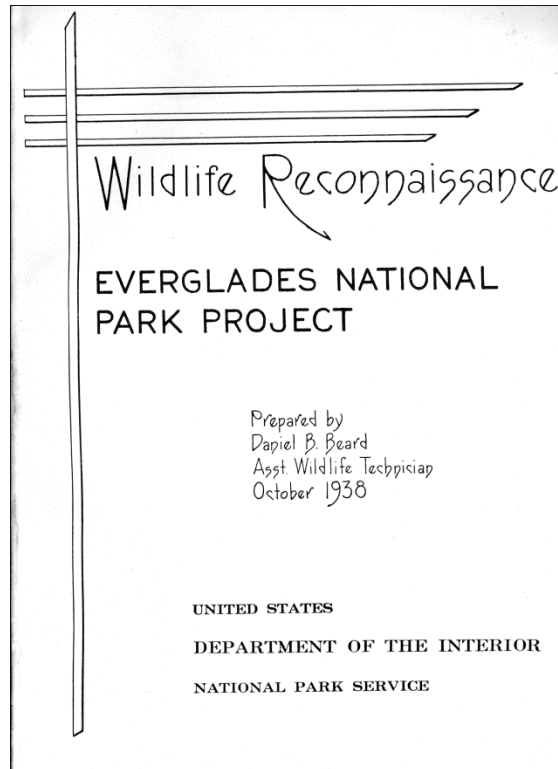


Figure 4-4, Daniel Beard's 1938 *Wildlife Reconnaissance*

Beard's study provided an overview of the climate, physiography, flora, and fauna of the Everglades. Because he was writing for an internal NPS audience, Beard was often rather blunt in his assessments. He acknowledged that the reasons for national park status were "90 percent biological ones" and that the area had been seriously compromised by human activities. Beard was convinced that the NPS would need to actively manage the area in order to counteract the effects of previous exploitation of natural resources and extensive drainage works. He advised his readers to look past existing conditions and consider what the area would be like "50 to 100 years from now . . . after years of protection and careful administration." In addition to drainage, Beard addressed fires, commercial fishing, hunting, trapping, timbering, agriculture, and the collection of rare plants and animals, notably the colorful tree snails of the genus *Liguus*. Other rare species that he singled out for attention included the Florida panther (at the time often called the Florida cougar), the manatee, the Everglades kite, the alligator, the American crocodile, and wading birds: the great white heron, the reddish egret, the roseate spoonbill, and the eastern glossy ibis. Beard frankly discussed the issues surrounding an acceptable park boundary, concluding that because of land values and local opposition, "it is doubtful whether the service can look forward to acquisition of Key Largo."²⁰⁷

²⁰⁷ Beard, *Wildlife Reconnaissance*, 1 and 95.

The 31-year-old wildlife technician was not shy about offering his “preliminary thoughts on the master plan” for the park. Beard clearly understood that the appropriate development for visitor access in a wilderness park was the key issue in park planning for the Everglades. At that time, Beard believed that no development of the Cape Sable beaches was compatible with protection of the natural resources. Like others in the NPS, he believed that the forbidding nature of the sawgrass marshes would keep visitors away from them, ensuring their protection. He did state that the presence of visitors on motor roads in selected areas of the park was compatible with the protection of nearby wilderness areas. Beard also understood that there would be considerable pressure from local interests for extensive development for recreational activity. He observed that the NPS might well be forced to construct a road from Everglades City some distance into the park, but he was dead set against the shoreline road touted by Ernest Coe and others (see figure 3–4A), arguing that the lakes, bays, and mangrove forests along the coast “must remain primitive.” Influenced by prevailing NPS attitudes about giving motorists interesting views from roads as well as access to notable features, Beard believed the existing Homestead to Flamingo Road would have to be scrapped in favor of a new road. As detailed below in Chapter 7, Beard would adhere to this view as park superintendent in the 1950s. Beard concluded his report with the recommendation that a biological research station be established in the park, although he noted that under current NPS policies, much of the research would need to be carried out by outside scientists under permit rather than NPS staff.²⁰⁸

The Oil and Gas Problem

The conviction of some that the Everglades could produce riches from oil and natural gas was a major deterrent to early park establishment. Entrepreneurs, such as William G. Blanchard, had been touting oil in the Everglades since the early 1920s. D. Graham Copeland in 1937 helped the Gulf Oil Company secure some oil leases in Collier County, and two years later, the Chevelier Land Company circulated flyers urging the public to buy or lease lands with oil potential from it while prices were still reasonable. Wells drilled in 1939 and 1940 found no oil, but then on September 26, 1943, Humble Oil Company’s Sunniland Well in Collier County, twenty-five miles north of the Tamiami Trail, began producing small amounts of oil. This development made the state reluctant to cede oil rights on state-owned land and gave private land owners exalted ideas about the value of their land. In 1946, Humble drilled two exploratory wells, 1.5 and 7 miles south of the Tamiami Trail at the present-day site of the Shark Valley Loop Road. This oil exploration activity deep in the Shark River Slough was extremely troubling to park boosters. Ernest Coe tried to make the best of the situation by downplaying any potential drawbacks from oil production. In 1944 he

²⁰⁸ Beard, *Wildlife Reconnaissance*, 101–106.

wrote “[T]here is every reason to anticipate that the scars of oil wells, when production equipment is removed, would very soon disappear.”²⁰⁹

Governors Holland and Caldwell Get the Park Project Moving Again

By 1940, the U.S. was at last pulling out of the Great Depression although Florida lagged the nation somewhat in its recovery. State tax receipts were on the increase, and all of the major candidates for governor that year pledged to work for the prompt establishment of Everglades National Park. Spessard L. Holland, a lawyer and state senator from Polk County with a considerable statewide reputation and strong support from business leaders, won the May 1940 gubernatorial run-off election and served from January 1941 to January 1945. The NPS also had new leadership, with Newton Drury of the Save-the-Redwoods League replacing Arno B. Cammerer as director in January 1940. Cammerer had suffered a heart attack and sought a less demanding job. He served as regional director in NPS Region One from August 1940 until his death in April 1941.²¹⁰ Support for the national park remained strong in Florida, with the state chamber of commerce, the State Democratic Party Committee, the Florida State Planning Board, and others passing resolutions urging action. The chair of the U.S. House Public Lands Committee, J. W. Robinson of Utah, toured the Everglades in December 1940. He told a reporter, “There’s only one Everglades and it should be dedicated as a national park,” but he added that state action was needed. From 1941 through 1947, under Holland and his successor Governor Millard Caldwell, protracted negotiations took place between the NPS and the state over a minimum park boundary, the retention of oil and mineral rights, and how the private land was to be paid for.²¹¹

In March 1941, Director Drury made his first visit to the Everglades to familiarize himself with the area and the issues involved in park establishment. Drury was accompanied by Region One Director Cammerer; NPS Chief Forester John Coffman; John H. Baker, executive secretary of the National Audubon Society (NAS); and

²⁰⁹ John O. Shares to Ernest F. Coe, Mar. 31, 1937, CP, EVER 21128; Chevelier Land Co. flyer, July 9, 1939, CP; “Behind the Front Page,” *Miami Herald*, Jan. 7, 1940; C. R. Vinten to Dir. Drury, Oct. 21, 1943, cited in Chronology, Everglades National Park—Florida, EVER 22965; Ernest F. Coe to Dir. Drury, May 5, 1944, EVER 22965, ser. I, sub. A, box 1.

²¹⁰ The NPS adopted a regional structure in 1937. Four regional offices were established. Region One had its headquarters in Richmond, Virginia. From 1937 to 1955, it included all the states east of the Mississippi River except Michigan, Indiana, Illinois, and Wisconsin.

²¹¹ Congressman Robinson’s statement is close to Marjory Stoneman Douglas’s famous opening to *The Everglades: River of Grass*: “There are no other Everglades in the World.” “7 Candidates Back Park Aid,” *Miami Herald*, Apr. 23, 1940; Colburn and Scher, 72–73; “Tribute Paid Sewell, Milam,” *Miami Herald*, June 9, 1940; “Cut Insurance Charges Seen,” *Miami Herald*, June 14, 1940; “Florida’s Park System,” *Palm Beach Post*, Jan. 1, 1941; John C. Miles, *Guardians of the Parks: A History of the National Parks and Conservation Association* (Washington, DC: Taylor & Francis, 1995), 134; “Congressman Says Florida Must Decide,” *Miami Daily News*, Dec. 15, 1940.

C. Ray Vinten. Vinten held two NPS positions: coordinating superintendent for southeastern monuments and superintendent of Castillo de San Marcos National Monument. Frederick Law Olmsted Jr. and Harlan Kelsey also participated in some of the trip. Baker and Vinten would play important roles in the negotiations leading to the park's establishment in June 1947. A successful investment advisor and passionate amateur ornithologist, Baker was executive director of the National Audubon Society (NAS) from 1934 to 1944 and its president from 1944 until his retirement in 1959.²¹² A landscape architect by training, Vinten was Castillo superintendent until his retirement in 1962. Following their tour of the Everglades, the NPS party went to Tallahassee for a March 10, 1941, meeting with Governor Holland and members of the Board of Trustees of the IIF.²¹³

The five-hour meeting in Tallahassee in early March 1941 marked the revival of the Everglades National Park project after four years of inertia. In addition to Governor Holland, Director Drury, and his NPS colleagues, John Baker, G. Orren Palmer of the ENPC, as well as Ernest Coe and Thomas Pancoast of the ENPA participated. Governor Holland believed that he needed to retain oil and gas rights to any state land that would become part of the park while Drury explained that the NPS could accept for park purposes only lands conveyed in fee simple, with no retained rights for the conveyor. John Baker then proposed an idea that had been previously under discussion within the NPS: that the state convey its lands for protection by the U.S. Fish & Wildlife Service (FWS), while retaining mineral rights. The FWS operated under less stringent legal requirements than the NPS, and it could protect the important bird rookeries and feeding grounds until it was determined whether commercial quantities of oil and gas were present in the Everglades. After discussions between Director Drury and Dr. Ira Gabrielson, director of the FWS, Secretary Ickes on April 4, 1941, wrote Governor Holland indicating his formal approval of temporary administration by the FWS. The Department of Interior and the NPS regarded this as a short-term expedient and looked forward to getting the state lands in fee simple at a later date for a national park, once what Drury called the "oil flurry" had died out. Director Drury at this time also formally designated Ray Vinten as his representative in talks with state officials.²¹⁴

At the same time that serious talks between NPS and the state got underway, Ernest Coe and May Mann Jennings were angling to get an appointment as managing director of the ENPC from Governor Holland. The 1941 session of the state legislature reauthorized the ENPC and appropriated \$25,000 for its operations from July 1, 1941, to June 30, 1943

²¹² The National Association of Audubon Societies changed its name to the National Audubon Society in 1940.

²¹³ " 'Glades National Park Meeting Set March 10,' *Miami Daily News*, Mar. 5, 1941; Graham, 118–119, 186, 198; "C. Ray Vinten," *St. Augustine Record*, Nov. 28, 1983.

²¹⁴ Dir. Drury to RDR1 Cammerer, Mar. 17, 1941, C. R. Vinten to Dir. Drury, Mar. 19, 1941, NARA II, RG 79, NPS CCF, box 905; Dir. Drury to SOI Ickes, Apr. 2, 1941, SOI Ickes to Gov. Holland, Apr. 4, 1941, NARA II, RG 48, DOI, Office of the SOI, box 3853

(House bills 1154 and 1165). The new legislation made no mention of the existing position of executive chairman, held by G. Orren Palmer, but it authorized a new position of managing director. Because the work of preparing abstracts of title was 90 percent complete, there was not a lot for the commission to do, at least until funds became available to purchase private holdings. For reasons that are not entirely clear, Governor Holland ignored the change of titles in the 1941 act and allowed Palmer to remain as head of the ENPC throughout his term. Because there seemed to be no prospect of getting the legislature to appropriate funds for land acquisition, Holland may have believed that it made little difference who headed the ENPC. To facilitate the new plan for FWS administration, the Florida legislature also passed an act explicitly authorizing the Trustees of the IIF to convey land for wildlife conservation while retaining oil, gas, and mineral rights (House bill 1164, Chapter 20653).²¹⁵

In addition to his concern about preserving oil and gas rights for the state of Florida, Governor Holland believed that the original park embracing more than 2,000 square miles was not acceptable to the people of Florida. To address this, Director Drury in the spring of 1942 dispatched an NPS team to the Everglades to make a new study of the boundary question. Headed by Conrad Wirth, Supervisor of Recreation and Land Planning, the team included Regional Director Thomas Allen, Vinten, and Regional Biologist Dan Beard.²¹⁶ The team concluded that the park could be reduced from 1,454,092 acres to 1,018,060 acres without “greatly impairing” the park’s value. The team recommended the elimination of Key Largo because of the high land values and the difficulty of administration. It emphasized the importance of including Florida Bay but called for the boundary to be moved from the shoreline of the keys to the line of the Intracoastal Waterway, a distance of between two and five miles. The team wanted to exclude about 75,000 acres on the north side of the Tamiami Trail, making the north boundary line run about three miles north of the trail. Another recommendation was to move the east boundary westward so as to exclude some acreage around Royal Palm Hammock and Long Pine Key because the areas were actively or potentially useful for agriculture. This included the acreage that later would become known as the Hole-in-the-Donut. The team also wanted to protect the Turner River by including in the park a strip running one-half mile on each side of the river. Presumably, this would have excluded some acreage lying between Turner River and Lopez River.²¹⁷

Director Drury returned to Tallahassee in June 1942 to present the reduced boundary to Governor Holland and F. C. Elliot, secretary and engineer of the IIF. Vinten, Wirth, and

²¹⁵ Ernest F. Coe to Gov. Holland, Mar. 24, 1941, Gov. Holland papers, box 34; Mrs. W. S. Jennings to J. M. Lee, Florida Comptroller, Sept. 1, 1941, MMJ papers, box 20.

²¹⁶ Thomas J. Allen was regional director of NPS Region One from 1944 to 1951.

²¹⁷ Dir. Drury to SOI Ickes, Mar. 28, 1941, NARA II, RG 48, DOI, Office of the SOI, box 3853; Conrad Wirth, Supervisor of Recreation and Planning, to Dir. Drury, Apr. 17, 1942, CP, EVER 22843.

Harold Colee, executive vice president of the Florida State Chamber of Commerce, also participated in the meetings. Colee would emerge as an important bridge to Florida's business community, the Model Land Company especially, in the ongoing negotiations. The new boundary was presented as a basis for discussion, not as an approved boundary. At this meeting, Holland made the suggestion that the southern portion of the park project might be treated differently than the northern. He proposed conveying the southern state holdings in fee simple to the U.S., with the caveat that, should the U.S. ever allow oil exploration, the state would receive any royalties. For the northern area, the governor wanted both the state and private sellers to retain the oil rights. The governor gave his opinion that it was highly unlikely that the legislature was prepared to appropriate funds for the acquisition of private holdings.²¹⁸

The negotiations between the state and the federal government proceeded without the participation of Ernest Coe. When Coe read of the proposed boundary reduction in the newspapers, he fired off a letter to Secretary Ickes urging him to hold to the original maximum boundary. Ickes replied:

I believe the Department should assume jurisdiction over any reasonably large area or areas that can be made available for park purposes. In time the project can be enlarged to whatever acreage is ultimately needed to serve its purposes.²¹⁹

For the rest of his days, Coe would focus on trying to preserve the boundary he had first suggested in 1928. His unwillingness to bend on this point meant that he played no constructive role in the search for a compromise that would eventually get the park established. To many observers, Coe was more of a hindrance than a help in the late 1930s and 1940s.

The NPS and Governor Holland negotiated through the remainder of 1942 and during all of 1943 about the details of a compromise solution that would immediately establish NPS authority in the critical southwestern area north and east of Cape Sable. The NPS was willing to administer an initial park area of as little as 200,000 acres, if the state would convey it without any reserved rights. Areas to the north would be placed under the protection of the FWS, with the state and private owners retaining the oil and mineral rights. If oil was not found, these areas would then be gradually placed under NPS protection. Although the NPS would begin providing protection immediately, the park would not be established until sufficient additional acreage had been conveyed. The governor was more inclined to deed to the NPS scattered areas containing rookeries and feeding grounds. Drury and Vinten met with Governor Holland and Congressman J.

²¹⁸ Gov. Holland to files, June 4, 1942, Gov. Holland papers, box 34.

²¹⁹ SOI Ickes to Ernest F. Coe, July 21, 1942, Gov. Holland papers, box 34.

Hardin Peterson in Miami on December 31, 1943, and January 1, 1944, to discuss these ideas further, as well as the new state and federal legislation that would be needed to implement them. Holland was eager to announce a solution that would bring NPS administration to the area before he left office in January 1945. Director Drury presented a formal proposal to place 200,000 acres under immediate NPS protection to Governor Holland in a letter dated February 15, 1944.²²⁰

Governor Holland declined this proposal, much to the annoyance of Secretary Ickes. Ickes wrote Holland:

We have made several readjustments to the original boundaries to meet conditions imposed by the Florida authorities, have at your request eliminated possible agricultural lands, and have agreed to your stipulation that if oil were ever developed in the National Park the royalties will go to the State of Florida.

The secretary concluded that the only remaining option was to seek to amend the federal authorizing act to permit the Department of the Interior to accept title to lands with retained oil rights for protection by the FWS, with no immediate NPS role. A national park would be established only after the state and private lands had “been cleared of oil reservations . . . provided the damage to the natural features has not been too great.” Ickes concluded by noting “this project has languished too long. . . . Time is running out in the Everglades.”²²¹

New state and federal legislation was required to allow the FWS to assume the duty of protecting wildlife in the Everglades. On December 6, 1944, President Roosevelt signed an act that authorized the secretary of the interior to accept title to land subject to oil, gas, and mineral reservations (see Appendix A for text of the act). The act further provided that a national park would not be established and no development would occur until a “major portion” of the land within the 1930 “recommended area” was conveyed to the U.S. If a park was not established within ten years of the act’s passage, any lands accepted by the U.S. would revert to the state or to the private grantor. The ten-year limit was inserted at the suggestion of Governor Holland. Regional Director Thomas Allen remarked that this represented a reversal of the usual procedure in which a federal law provided that a park would be established if a state conveyed land by a certain date. Florida instead insisted “that we [the U.S.] can have the necessary lands providing they do not decide to do something else with them by a certain date,” e.g., lease them for commercial oil production.²²²

²²⁰ Dir. Drury to SOI Ickes, Sept. 27, 1943, cited in Chronology, Everglades National Park—Florida, ENP, EVER 22965; C. R. Vinten to Dir. Drury, Jan. 5, 1944. NARA II, RG 79, NPS CCF, box 900; Dir. Drury to SOI Ickes, Feb. 15, 1944, EVER 22965, ser. I, sub. A, box 2.

²²¹ SOI Ickes to Gov. Holland, NARA II, RG 48, DOI, Office of the SOI, box 3853.

²²² P. L. 78–463, Dec. 6 1944; RDR1 Allen to C. Ray Vinten, Aug. 19, 1944.

More meetings were held in Tallahassee in December 1944 in the final weeks of Governor Holland's term. The principal participants in a December 13 meeting were the governor; FWS Director Gabrielson, Ray Vinten; John Baker; Ernest Coe; Florida Commissioner of Agriculture Nathan Mayo; Florida Secretary of State R. A. Gray; and Fred Elliot of the IIF.²²³ Governor-elect Millard Caldwell sat in on some of the meeting. A major outcome of the meetings was an agreement on the boundary of the lands to be conveyed by the state to the U.S. for protection by the FWS. The NPS and FWS were pleasantly surprised that the state was willing to convey about 500,000 acres on the mainland and more than 500,000 acres of submerged lands. After reviewing the recently passed federal law, the participants decided that new Florida legislation would be needed to authorize conveyance of lands to the FWS rather than the NPS as previously provided. The state made it clear that if it granted oil leases on its land, they would be limited to ten years or less. If oil in commercial quantities was found, the leases would continue; if not, they would expire. The general hope was that no producing wells would be developed, the oil leases would expire, and a national park would be established within the ten-year limit. John Baker committed the Audubon Society to continuing its warden work in the Everglades until the FWS was fully able to assume protection duties. Governor-elect Caldwell commented that he was "not too optimistic" about getting an appropriation for private land acquisition from the 1945 session of the state legislature.²²⁴

It remained for the Trustees of the IIF to ratify the actions agreed upon on December 13, 1945. The trustees met on December 19 and again on December 28. At the second meeting, the trustees approved a memorandum of agreement and a deed of conveyance to the federal government. The deed envisioned a park of 1,183,600 acres. One of the five trustees, Attorney General Tom Watson, objected to the arrangement that had been worked out and refused to sign either document.²²⁵ This was not fatal, as only a majority of the five trustees was needed to ratify an action. The memorandum of understanding committed the IIF and the Department of the Interior to cooperating to protect the wildlife resources of the area to be conveyed. The trustees also agreed to do what they could to prevent pollution and damage from any exploratory oil drilling. The deed conveyed to the federal government the state holdings, subject to the retention of the oil, gas, and mineral rights and the ten-year reversion provision. On January 2, 1945, the secretary of the interior announced his conditional acceptance of the deed proffered by the state, and on January 12, he executed the

²²³ Also present were D. J. Chaney, an FWS attorney, John H. Davis Jr. of the Florida Geologist's office, attorneys Irvin and Heinz of the Florida Attorney General's office, and F. E. Bayless from the state department of agriculture..

²²⁴ Memorandum of Dec. 13, 1944, Conference re Everglades National Park, Gov. Holland papers, box 35; C. R. Vinten to Dir. Drury, Dec. 16, Dec. 19, and Dec. 21, 1944, NARA Ph, RG 79, 79-67-A-1022, boxes 22, 27.

²²⁵ Watson would go on to make protection of oil and gas rights in the Everglades the keynote of an unsuccessful run for the governorship in the 1948 primary (see Chapter 6).

memorandum of agreement.²²⁶ Formal acceptance of the deed did not occur until March 1947. As Director Drury put it to Dr. David Fairchild, the agreement hammered out with the state “was not the ideal” but represented “the ‘second best’ means to the accomplishment of ultimate national park objectives.”²²⁷ The DOI and NPS believed that there was no alternative to allowing Florida up to ten years to determine whether commercial quantities of oil and gas were present in the Everglades.

The Everglades National Wildlife Refuge was established in March 1945, under the protection of the U.S. Fish and Wildlife Service. Daniel B. “Dan” Beard was named refuge manager. The operations of the refuge before the establishment of Everglades National Park are covered in Chapter 5.

Millard Caldwell was inaugurated governor in January 1945 amid renewed hopes that Everglades National Park could be established within a relatively few years. A lawyer and businessman who began his career in Santa Rosa County, Caldwell had the support of the same business leaders who had been behind Holland in 1940. The new governor was fully supportive of the park project, but wanted the NPS to commit to establishing the park based on an acreage that could be obtained relatively quickly. He also was frustrated that the ENPA in its sixteen years of existence had failed to raise a single dollar for the acquisition of private lands. Caldwell persuaded outgoing governor Holland to be his informal representative on Everglades land issues. In early March 1945, Caldwell and Holland spent three days with Ray Vinten and John Baker touring the Everglades. At about the same time, Caldwell appointed Gilbert Leach as managing director of the ENPC. Leach, publisher of the *Leesburg Commercial*, had been public relations manager for Caldwell’s campaign. Before he adopted a strategy on land acquisition for the park, Caldwell asked Leach to investigate the previous operations of the ENPC and its relations with the ENPA.²²⁸

Gilbert Leach was a new player in the Everglades story; another was John Pennekamp, associate editor of the *Miami Herald*. As Pennekamp later told the story, some time late in his gubernatorial administration, Spessard Holland was in a conversation with John Knight, publisher of the *Herald*. When the talk turned to the Everglades National Park project, Knight asked what that was. Indignant, Holland shot back, “Don’t you read your own newspaper? You had a story this morning about it.” Knight then spoke with Pennekamp, who filled him in on what the park could mean for Florida in terms of national attention and tourist revenues. Knight assigned his associate editor the task of

²²⁶ Proceedings of the Trustees of the IIF, Dec. 28, 1944; DOI press release, Jan. 2, 1945, CP, EVER 22201; Acting Dir. Charles E. Jackson to SOI Ickes, Jan. 5, 1945, NARA II, RG 48, DOI, Office of the SOI, box 3853.

²²⁷ Dir. Drury to Dr. David Fairchild, Jan. 19, 1945, NARA Ph, RG 79, 79-67-A-1022, box 22.

²²⁸ Colburn and Scher, 73; “Proposed Everglades Park to Be Visited,” *Daytona Beach Morning Journal*, Mar. 2, 1945; C. R. Vinten to Dir. Drury, Mar. 12, 1945, EVER 22965, ser. I, sub. A, box 2.

helping make the park a reality. From this point, Pennekamp and the *Herald* were among the most effective allies in the drive to get the park established.²²⁹

The renewed drive for an Everglades National Park in the 1940s reflected the growing belief that tourism would be an important driver of the postwar Florida economy. During the war, Florida business owners and politicians actively planned to reestablish and expand the state's revenues from tourism just as soon as the war ended and travel restrictions eased. In 1943, the Florida Chamber of Commerce prepared a detailed plan for postwar tourism, and in 1945, the Florida legislature appropriated the unprecedented sum of \$1 million for tourism promotion. That same year, a *Miami Daily News* editorial noted that "the public is getting an idea that such a park will be a gold mine." Business interests were keenly aware that many of the 2 million men and women who had done wartime service in the state would welcome a chance to return for vacations. The more favorable attitudes toward an Everglades park among Florida's politicians are partly explained by these economic motives.²³⁰

ENPC Managing Director Gilbert Leach established contact with Pennekamp as well as the editor of the *Miami Daily News*, the Miami Chamber of Commerce, the Miami Rotary Club, and other area groups. He also talked to business leaders in Key West, who remained nervous about having Key Largo acreage made part of the park against their wishes. Leach soon reported to Governor Caldwell that the ENPC had done little under G. O. Palmer's leadership and that hardly anyone in Miami business and civic circles even knew Palmer. He found that there was much confusion over the respective roles of the ENPC and the ENPA, and he concluded that when the two organizations had been headed by Ernest Coe from 1935 to 1937, "the result was disastrous, both financially and in the lack of practical results." Leach's initial recommendation was that the ENPC be made a small body and the membership of the ENPA expanded.²³¹

Governor Caldwell, Leach, Pennekamp, and Vinten made an effort to convert the ENPA into an effective fundraising organization. One idea was to expand the association's membership. Their thinking was that if the association could attract prominent members from across Florida, it would be in a much better position to obtain contributions. Adding some prominent Floridians to the membership also might reduce the dominance of Ernest Coe over the organization. In May 1945, Caldwell put some pressure on the association with a few pointed public remarks. The governor told the press that he was not certain the ENPC should continue in existence, stating that "unless the local people, particularly the Everglades National Park Association, show some real interest [in raising money] I'm

²²⁹ E. V. W. Jones to Merrill Winslett, June 14, 1966, SLH papers, box 587.

²³⁰ Tracy J. Revels, *Sunshine Paradise: A History of Florida Tourism* (Gainesville: University Press of Florida, 2011), 93; "Real E-stating It," *Miami Daily News*, Apr. 1, 1945.

²³¹ Gilbert Leach to Gov. Caldwell, Mar. 13, Mar. 24, and May 25, 1945, Gov. Caldwell papers, box 25.

going to withdraw the State support.” For a time it appeared that the ENPA would take on the fundraising role, but Coe still wanted his maximum park boundary.²³²

Fundraising and an acceptable minimum boundary were the dominant issues at a September 5, 1945, Miami meeting called by John Knight and John Pennekamp of the *Herald*, most likely with the approval of Governor Caldwell. Former governor Holland; Ray Vinten; ENPC Managing Director Leach; Coe; and Mark Wilcox of the ENPA also were in attendance. Caldwell and Holland pushed for the quick establishment of the park with a reduced boundary, with the understanding that additions could be made later. Coe was alone in arguing for the original boundary. Holland said he was willing to head up a fundraising committee if the disputes about the boundary could be ended and if the ENPA agreed to seek an expanded, more “representative” membership. Finding himself in the minority on the boundary question, Coe announced his resignation as ENPA executive director, but he rescinded it within ten days. In mid-October, Coe let it be known that the association would not expand its membership or engage in fundraising, unless the state and the NPS committed to the full original boundary. As Ray Vinten put it, “we are now right back where we were last December with the State of Florida assuming full responsibility for park establishment.”²³³

When the National Association of Audubon Societies held its annual meeting in New York in October 1945, John Pennekamp, Ray Vinten, and John Baker took advantage of the occasion to hold further discussions about the Everglades situation. Dr. Gabrielson of the FWS, C. Kay Davis, head of the U.S. Soil Conservation Service Florida office, and Ernest Coe participated in the discussions. At this point, Pennekamp was unofficially representing Governor Caldwell in negotiations and also using his forum in the *Herald* to advance the state’s point of view. Pennekamp pressed the NPS to go beyond a general statement of principles concerning a minimum acceptable park area and offer the state “a minimum area defined by a definite [boundary] line.” Ernest Coe continued to hold out for the maximum boundary. Vinten agreed to take the state’s request to the director and the secretary of the interior. Everyone in attendance agreed that more definitive information on land values was needed before donations for purchasing land could be sought. Kay Davis proposed that the Soil Conservation Service prepare a survey of the Everglades soils, which would indicate which areas had potential for agriculture, and therefore would have a higher valuation.²³⁴

²³² C. R. Vinten to Dir. Drury, Apr. 5, 1945, EVER 22965, ser. I, sub. A., box 1; “Gov. Caldwell Asks Help on Glades Park,” *Florida Times-Union*, May 23, 1945; “Drive Urged to Raise Fund for Glades Park,” *Miami Herald*, July 3, 1945.

²³³ Spessard L. Holland to Dir. Drury, Sept. 24, 1945, EVER 22965, ser. I, sub. A, box 1; C. Ray Vinten to Dir. Drury, Sept. 17, 1945, C. Ray Vinten to Dir. Drury, Oct. 18, 1945, NARA Ph, RG 79, 79-67-A-1022, boxes 22, 100.

²³⁴ C. Ray Vinten to Dir. Drury, Oct. 30 and Nov. 14, 1945, EVER 22965, ser. I, sub. A, box 1; John Pennekamp to Gov. Caldwell, Nov. 1, 1945, NARA Ph, RG 79, 79-67-A-1022, box 22.

Following additional conversations in Washington and the exchange of correspondence, Secretary Ickes wrote Governor Caldwell in early January 1946. Ickes gave Caldwell the firm commitment that he wanted, attaching a map with a boundary outlined in red and stating, “This is the minimum area acceptable for a national park.” Predictably, Ernest Coe was unhappy and wrote Director Drury that if the secretary “approves a minimum area map that does not include the major features for the park included in the authorization, the writer will recommend that the Association wind up its affairs, he himself resigning.” Wanting to avoid a public battle among the Florida supporters of the park, Secretary Ickes did his best to placate Coe, assuring him that the minimum boundary needed for establishment was not the final boundary and that additions to the park could be made later. Coe withdrew from the affairs of the ENPA for a few weeks, but he was again signing himself as executive director by late March 1946.²³⁵

Shortly after writing to Governor Caldwell, Secretary Ickes resigned, effective February 15, 1946. His leaving was not connected with any Everglades issues but was in protest over President Truman’s naming of an oil industry executive as undersecretary of the Navy. The President named Julius Krug, formerly with the Tennessee Valley Authority and the War Production Board, to replace him. Following confirmation by the Senate, Krug assumed office on March 18, 1946.²³⁶

To fulfill the commitment made in October 1945, the Soil Conservation Service (SCS) conducted a reconnaissance conservation survey of the park area from January 23 through February 5, 1946. The SCS concluded that the vast majority of the soils in the proposed park area were unsuitable for agriculture. This was attributed to a variety of factors: soils were either too low in elevation, lacked a reliable source of fresh water, had been contaminated by salt water, or could not be successfully drained. Only an area of about 9,600 acres west of Royal Palm Hammock, consisting of Rockdale soils, was found to have potential for tomatoes and citrus. Even here, the SCS concluded that the land would have to be cleared and scarified, and might not get enough water in dry years.²³⁷

Now that he had a firm commitment from the DOI on an acceptable minimum boundary and an understanding that most of the proposed park area was unsuitable for agriculture and consequently of low market value, Governor Caldwell was ready to move ahead on land acquisition. Caldwell arranged for John Pennekamp to host a meeting of park

²³⁵ Ernest F. Coe to SOI Ickes, Jan. 16, 1946, Gov. Caldwell papers, box 25; Daniel Beard, Manager, Everglades NWR, to Assoc. Dir. A. E. Demaray, Mar. 18, 1946, EVER 22965, ser. I, sub. A, box 1; SOI Ickes to Gov. Caldwell, Jan. 8, 1946, Ernest F. Coe to Dir. Drury, Jan. 8, 1946, NARA Ph, RG 79, 79-67-A-1022, box 22; “Ickes Smooths Row Over Glades Park,” *Miami Herald*, Jan. 10, 1946.

²³⁶ T. H. Watkins, *Righteous Pilgrim: The Life and Times of Harold L. Ickes, 1874–1952* (New York: Henry Holt & Co., 1990), 827–28, 832.

²³⁷ U.S. Soil Conservation Service, “Reconnaissance Survey of Proposed National Park Area,” n.d. [Feb. 1946], CP, EVER 22328.

supporters in Miami on February 11, 1946. John Baker, Gilbert Leach, Ray Vinten, Harold Colee, and representatives of the SCS, the Florida Federation of Women's Clubs, and the Florida Federation of Parent-Teachers Associations were among the forty people who attended. Ernest Coe did not attend, and the ENPA was represented by its president, J. Mark Wilcox. The purpose of the meeting was to show widespread support in Florida for the national park and to plot strategy for land acquisition. The Florida State Chamber of Commerce, the PTA group, and the Florida Federation of Women's Clubs all pledged support for a fundraising campaign. The attendees also made a formal request to Governor Caldwell to immediately reactivate the ENPC, on a "statewide" basis.²³⁸ It is clear that everyone but Ernest Coe had accepted that only a smaller park could be established right away, and the Miami meeting no doubt was partly motivated by a desire to show how isolated Coe had become and the widespread support for the rapid establishment of a park of minimum acceptable size.

In March 1946, Governor Caldwell responded to the NPS proposal on establishing the park that had been conveyed in Secretary Ickes's January 8 letter and a follow-up letter from Vinten dated February 26. Caldwell agreed: 1) that the park would be established when all the lands within the minimum boundary on Ickes's map had been conveyed to the federal government subject to any restrictions contained in the IIF's 1944 deed; 2) that it was "understood" that acquisition of all lands within the boundary would be accomplished within the ten-year limit set in the 1944 act; and 3) that the establishment of the park based on the minimum boundary did not preclude future park expansion, and the state understood that the acquisition of "additional drainage areas" would probably be required. The 1944 deed had a provision reserving to the state oil, gas, and mineral rights, and there would be considerable negotiation over this point before a final agreement could be reached. Caldwell now moved forward with the reinvigoration of the ENPC and began to solicit suggestions for members.²³⁹

²³⁸ C. Ray Vinten to Dir. Drury, Feb. 14 and Feb. 20, 1946, John Pennekamp to Gov. Caldwell, Feb. 14, 1946, NARA Ph, RG 79, 79-67-A-1022, boxes 22, 100.

²³⁹ John Pennekamp to Gov. Caldwell, Feb. 27, 1946, Gov. Caldwell to C. R. Vinten, Mar. 27, 1946, EVER 22965, ser. I, sub. A, box 1.

A Revitalized Everglades National Park Commission

Governor Caldwell in April named twenty-five Floridians to a reconstituted Everglades National Park Commission. These appointments were made in an effort to ensure broad support for the park's establishment across the state. Key appointees were John Pennekamp, Harold Colee, and August Burghard, an advertising man from Ft. Lauderdale. Ray Vinten later related that he, Pennekamp, and Colee presented a list of fifty names from which the governor selected twenty-five. Four veterans of the 1930s version of the commission, D. Graham Copeland, May Mann Jennings, Mrs. T. V. Moore, and Norberg Thompson, were named. Dr. E. C. Lunsford, a Miami dentist who had purchased a considerable tract at Cape Sable in hopes of building a resort, was also appointed. Eighteen of the members and the commission's Managing Director Gilbert Leach were present when Caldwell kicked off the first meeting in Miami on May 25, 1946. Vinten, NPS Regional Director Tom Allen, and Refuge Manager Dan Beard were also on hand. Governor Caldwell started by stating that he believed that conditions were now right for the ENPC to begin raising funds for purchasing land for the park. He named August Burghard as temporary chairman of the commission (a position that was made permanent in July 1946) and turned the meeting over to him.²⁴⁰

The April meeting of the ENPC was primarily concerned with bringing members up to date on the project's history, matters of organization, and brainstorming about fundraising. It was still hoped that some landowners would donate their holdings or accept state-owned land outside the park boundary in exchange. With the proceeds of a nationwide fundraising effort, the commission hoped to be able to purchase the remaining land. John Pennekamp thought that the total sum required would not exceed \$2 million and might be as little as \$500,000. The commission elected an eight-person executive committee, which was expected to handle the bulk of the work to be accomplished. The committee consisted of:

August Burghard, advertising agency head, Ft. Lauderdale
John D. Pennekamp, associate editor, *Miami Herald*, Miami
Karl Bickel, president, Florida State Historical Society, Sarasota

²⁴⁰ The full ENPC membership roster: John D. Pennekamp, Miami; J. Kennard Johnson, Miami; Leonard K. Thompson, Miami; Dr. E. C. Lunsford, Miami; Mrs. T. V. Moore, Miami; August Burghard, Ft. Lauderdale; D. Graham Copeland, Everglades City; John H. Perry, Palm Beach; Carl Brorein, Tampa; Karl Bickel, Sarasota; Martin Anderson, Orlando; Mrs. W. S. Jennings, Jacksonville; Harold Colee, Jacksonville; Fayette Holland, Jacksonville; Richard D. Pope, Winter Haven; Mrs. Joseph L. Gray, Lake City; Mrs. Gillen McClure, Apopka; A. B. Michael, Webasso; Norberg Thompson, Key West; A. Cliff Johnson, Pensacola; G. C. Ware, Leesburg; General Albert H. Blanding, Tallahassee; Joe Hall, Tallahassee; Nelson D. Poynter, St. Petersburg; and Carl Hanton, Ft. Myers. "Glades Group Hopes to Get Land by 1949," *Miami Herald*, Apr. 26, 1946; Daniel Beard, Manager, Everglades NWR, to C. R. Vinten, Apr. 5, 1946, EVER 22965, ser. I, sub. A, box 1; C. Ray Vinten, interview by Boyd Evison, Apr. 6, 1971, transcript, St. Augustine Historical Society.

Mrs. W. S. [May Mann] Jennings, Florida Federation of Women's Clubs, Jacksonville
Harold Colee, executive vice president, Florida State Chamber of Commerce, Jacksonville
D. Graham Copeland, Collier County Commissioner, Everglades City
General Albert H. Blanding, Tallahassee
John H. Perry, publisher, *Palm Beach Post*

On the day following the Miami meeting, Vinten, Allen, and Beard escorted twelve commission members on a tour of the park area, which included a boat trip through Whitewater Bay and up Shark River and dinner at the lodge at Royal Palm State Park.²⁴¹

The ENPC executive committee held its first meeting in June 1946 at Dr. Lunsford's vacation home on Windley Key (located between Plantation Key and Upper Matecumbe Key). Regional Director Allen, Vinten, Beard and McGregor Smith, president of Florida Power & Light Company (FP&L) were present. The FP&L, believing that the national park would bring tourists and tourist development to Florida, was a strong supporter of the park project. The company had already donated legal services to the ENPC. At this meeting, McGregor Smith agreed to pay the printing costs for commission stationary; FP&L later underwrote 100,000 copies of a promotional postcard of the park. Nonetheless, some roadblocks were already being encountered in the proposed land acquisition effort. The Trustees of the IIF, who had to approve all exchanges involving state lands, were raising a number of questions and making it clear that they were not going to trade valuable land elsewhere in the state for Everglades land "with practically no surface value." A letter from the governor asking landowners to donate their holdings for the park had not been approved and was the subject of some discussion. When the letter was sent in July, no donations were forthcoming.²⁴²

The executive committee met again on October 21, 1946, in Jacksonville. Spessard Holland, who by this point was a U.S. Senator,²⁴³ Regional Director Allen, Ray Vinten, Dan Beard, C. Kay Davis of the SCS, and Fred Elliot of the IIF also were present. The intricacies of exchanging land and the details of a fundraising campaign were again discussed. John Pennekamp was getting impatient and suggested that the commission redirect its efforts toward getting a \$2 million appropriation for land acquisition from the state legislature. Director Drury a few days later also described himself as "disappointed in the accomplishments of the Commission to date." There continued to be discussions

²⁴¹ Organization Meeting of the ENPC, Apr. 25, 1946, CP, EVER 19430.

²⁴² Official Meeting of the Executive Committee of the ENPC, June 15, 1946, August Burghard, ENPC, to land owners, July 19, 1946, Gov. Caldwell papers, box 25.

²⁴³ Holland had been elected to the Senate in May 1946 to replace retiring Senator Charles Andrews. Andrews then died in office, and Holland served the remainder of Andrews's last term, beginning September 25, 1946.

among Governor Caldwell, the Trustees of the IIF, and the NPS over how to handle the oil rights on the lands that the state was donating.²⁴⁴

The Final Steps Leading to Park Establishment

Director Drury came to Miami in January 1947 to meet with the ENPC executive committee. In addition to the director, Regional Director Allen, Vinten, and Beard were present. Prior to the meeting, Dan Beard stressed the importance of Drury making some firm commitments to rapid development of the park in order to get a legislative appropriation. When Chairman Burghard pressed the NPS representatives about their development plans, Allen said it was difficult to predict because a master planning process needed to occur first. Drury agreed to send the commission some information on what had been done in other national parks and thought he could provide “a general outline of what the general development” might be in the Everglades. The executive committee now believed that mounting a major fundraising campaign would take a considerable amount of time and was uncertain of its success. They decided that an appropriation from the state legislature would be a faster and surer way to proceed. Pennekamp stressed the importance of having a delegation from the commission meet with Governor Caldwell to sell him “on this idea of a legislative appropriation for land acquisition.”²⁴⁵

Pennekamp believed that it would require a great deal of persuasion to get the governor to ask the legislature for money for land acquisition. When he learned that the governor was to be in Miami on March 1, Pennekamp, Gilbert Leach, and some other Everglades National Park Commission members arranged a meeting with Caldwell. C. Kay Davis of the SCS came along and showed maps of the proposed park and its access roads to the governor. Much to the commission members’ surprise, Caldwell agreed to push for an appropriation, if that would lead to rapid establishment of the park. Caldwell then met with Vinten and Beard and was able to persuade the Trustees of the IIF to allocate \$500,000 from their treasury to land acquisition for the park. The governor tentatively agreed to ask the legislature for an additional \$1.5 million.²⁴⁶

A meeting of the ENPC executive committee preceded an open meeting of the commission in Ocala on Saturday, March 8. Pennekamp explained to the executive committee what had

²⁴⁴ Report to ENPC on Activities of the Executive Committee, including Meeting in Jacksonville, Oct. 21, 1946, CP, EVER 19432; Dir. Drury to RDR1 Allen, Oct. 30, 1946, NARA Ph, RG 79, 79-67-A-1022, box 100; Gov. Caldwell to C. R. Vinten, Oct 30, 1946, cited in Chronology, Everglades National Park—Florida, ENP, EVER 22965.

²⁴⁵ Dan Beard to C. R. Vinten, Jan. 8, 1947, EVER 22965, ser. I, sub. A, box 2; Meeting of the Executive Committee of the ENPC, Jan. 14, 1947, CP, EVER 19434.

²⁴⁶ RDR1 Allen to Dir. Drury, Mar. 10, 1947; Gilbert Leach to J. E. Straughn, Exec. Sec. to Gov. Caldwell, Mar. 3, 1947, Gov. Caldwell papers, box 26; Notes of Executive Committee Meeting of ENPC, Mar. 8, 1947, EVER 58941.

transpired in Miami and Tallahassee in the past week. The executive committee had urged Directory Drury to attend, but he could not, and Ray Vinten represented the director. In the open session, the commission members committed themselves to vigorously lobbying the state legislature for an appropriation. They also decided to press the NPS to take responsibility for acquiring land with the expected state funds. It was now clear that most privately held lands would have to be obtained through condemnation proceedings. The commission believed that federal court proceedings would move much more quickly than state action. They and the governor also no doubt felt that it would go down better for them politically if the federal government, rather than the state, was the one filing condemnation actions against reluctant land owners. When the ENPC meeting adjourned at 4:15 pm, Robert H. Fite, a Florida Power & Light Company vice president, invited the male commission members and some guests to repair to a company camp at Orange Springs for dinner and an overnight stay. He apologized to the women commission members that the camp had no facilities for them. There is no evidence that the intent was to exclude the women because they had different viewpoints. Rather, in the climate of the late 1940s, it was taken for granted that men were the ultimate decision-makers and that the stag atmosphere of a fish camp was not appropriate for women. Ray Vinten later wrote to Regional Director Allen, “the discussions and decisions made at this camp were probably of greater significance than those made at the formal meeting.” The women commission members were not involved in those decisions although nothing indicates they would have opposed them.²⁴⁷

Among the guests at the camp that Saturday evening were two powerful state senators, B. C. “Bill” Pearce of Palatka and W. A. Shands of Gainesville. Pearce and Shands were leaders of the “Pork Chop Gang,” the North Florida representatives who pretty much controlled the state legislature in this period. The senators, John Pennekamp, and some others got a poker game going. As Pennekamp later told it, he had a phenomenal run of luck that day. “I won hand after hand. Made uncanny draws.” Finally Pearce asked in disgust, “Just how much money do you need for that god-damned park of yours?” Pennekamp said the sum was two million dollars, and Pearce replied, “Why don’t you come on over to the Legislature and get it instead of taking it out of *our* pockets?” Pennekamp always insisted that this informal pledge over a poker hand was the key to eventually getting the state appropriation. Of course, by this point, the governor was already behind the idea. The legislature also had shown its enthusiasm for tourist promotion via its 1945 appropriation of \$1 million. It seems likely that the economic benefits of a national park were finally becoming apparent, even to the Pork Chop Gang.²⁴⁸

²⁴⁷ C. R. Vinten to RDR1 Allen, Mar. 11, 1947, NARA II, RG 79, NPS CCF, box 901; Notes of ENPC Meeting, Mar. 8, 1947, EVER 58941.

²⁴⁸ C. R. Vinten to RDR1 Allen, Mar. 11, 1947; “FPL Played Hand in Creating Everglades National Park,” undated Florida Power & Light internal newsletter.

On March 14, 1947, Secretary Krug officially accepted the deed that the state of Florida had prepared in December 1944 conveying state lands to be protected as a U.S. Wildlife Reserve. The state had already granted oil and mineral leases on some of these lands, and to that point, it had insisted on retaining the rights on the remainder. DOI attorneys studied the 1944 federal law that provided for a smaller park. The act allowed the secretary to establish the park when he had accepted title to “a major portion” of lands within a park boundary to be selected by him. If the state could be persuaded to give up its reserved oil rights on lands where the rights had not been sold, and such acreage amounted to more than the acreage covered by reserved rights, the terms of the law would be satisfied. The outlines of a grand bargain were now visible.²⁴⁹

Intensive talks took place at the very end of March and beginning of April 1947. Senator Holland in Washington met many times with NPS officials and Secretary Krug. In Florida, Ray Vinten was in close contact with Governor Caldwell and John Pennekamp. The secretary expressed a willingness to establish a park of about 706 square miles, if the state agreed to give up its reserved oil, gas, and mineral rights on some 380 square miles. The United States would be accepting in fee simple some 54 percent of the park lands, thus satisfying the “major portion” provision of the 1944 act. The state insisted on a provision where it would receive royalties if the NPS ever were to allow oil exploration on the fee simple lands. As mentioned above, Humble Oil Company had been drilling north and south of the Tamiami Trail; Humble and other oil producers had not given up on the potential of the Everglades to produce petroleum in marketable quantities. It was generally understood that the NPS was unlikely to allow such exploration on land it owned except during a dire national emergency. In return for urging the legislature to pass the \$2 million appropriation, Governor Caldwell received assurances that the federal government would handle land acquisition, that the NPS would move rapidly to condemnation, and that the park soon would be declared established, before the end of 1947 if at all possible. Lands that had been conveyed to the federal government on which the state had already granted oil leases would remain under FWS protection until the leases expired, when they would be added to the park. The IIF agreed to amend the terms of the 1944 deed in accordance with these terms. It was later determined that additional federal legislation would be required to specifically authorize federal purchase of land using state funds (see Chapter 6).²⁵⁰

Secretary Krug sent a telegram to Governor Caldwell on April 2, 1947, stating the terms of the bargain that had been hammered out. The key sentence:

²⁴⁹ RDR1 Allen to C. R. Vinten, Mar. 28, 1947, EVER 22965, ser. I, sub. A, box 2; Dir., FWS, to SOI Krug, Mar. 7, 1947, approved Mar. 14, 1947, NARA II, RG 79, NPS CCF, box 901.

²⁵⁰ RDR1 Allen to Dir. Drury, Mar. 20, 1947, NARA II, RG 79, NPS CCF, box 901; “Krug Pledge Assures an Everglades Park,” *Miami Daily News*, Apr. 6, 1947.

I agree to establish a new minimum area of approximately 706 square miles as the Everglades National Park as soon as satisfactory title to major portion or more than half thereof is transferred by the State to the Federal Government for park purposes and two million dollars has been made available by the State for the acquisition of privately owned lands.

On April 3, Governor Caldwell wired Secretary Krug that he was sending the \$2 million appropriation to the legislature with his endorsement and agreed to the other provisions of the deal.²⁵¹

On behalf of the Florida congressional delegation, Senator Holland on April 5 announced the terms of the bargain that would soon lead to the establishment of Everglades National Park. Holland paid tribute to Governor Caldwell for completing the deal and praised the decades-long conservation work of the Florida Federation of Women's Clubs and the Audubon Society in the Everglades. The state senate passed the \$2 million appropriation unanimously on April 16, and the House passed it with only six no votes the next day. The governor then signed the bill on April 24. The Trustees of the IIF took rapid action to fulfill their obligations, with only Attorney General Watson continuing to dissent. Watson was gearing up for a run for governor in 1948 and had decided to position himself as the champion of the state's valuable oil and mineral rights in the Everglades. Watson filed a number of lawsuits attempting to stop the park's establishment, all of which were eventually dismissed (see Chapter 6).²⁵²

Once a check for \$2 million was received from the state, Secretary Krug on June 20, 1947, signed Secretarial Order No. 2338, officially establishing Everglades National Park. The park consisted of 710 square miles (454,400 acres) (figure 4–5, park boundary at establishment, 1947). The secretary noted that an additional 461,482 acres of submerged lands and islands and extensive acreage north of the park were in federal ownership and being administered as a wildlife reserve. When oil leases on this land expired, they would become part of the national park. With the addition of this acreage and the purchase of private holdings, a park ultimately embracing 2,000 square miles was envisioned. At last, almost nineteen years after Ernest Coe had established the Everglades National Park Association, Everglades National Park was a reality.²⁵³

²⁵¹ SOI Krug to Gov. Caldwell, Apr. 2, 1947, Gov. Caldwell to SOI Krug, Apr. 3, 1947, NARA Ph, RG 79, 79–67-A-1022, box 85.

²⁵² “Krug Pledge Assures an Everglades Park”; Gov. Caldwell to SOI. Krug, Apr. 24, 1947, F. C. Elliot, IIF, to RDR1 Allen, June 14, 1947, NARA II, RG 79, NPS CCF, box 901; John Pennekamp to Gov. Caldwell, June 28, 1947, Gov. Caldwell papers, box 26.

²⁵³ “Everglades Becomes 28th National Park,” DOI press release, June 20, 1947.



Figure 4-5, park boundary at establishment, 1947



**Wilderness on the Edge:
A History of Everglades National Park**

*Chapter 5:
First a Wildlife Refuge, Then a National Park*

Chapter 5: First a Wildlife Refuge, Then a National Park

The Everglades National Wildlife Refuge

World War II was not yet over in spring 1945 when the U.S. Fish & Wildlife Service (FWS) became responsible for patrolling 400,000 acres in the Everglades under the agreement worked out with Governor Holland. The preserve was a discontinuous collection of state- and federal-owned land, supplemented by a few private parcels where owners had granted easements to the FWS.²⁵⁴ FWS personnel began limited patrols in the Everglades National Wildlife Preserve around May 15, 1945. The service saw its mission as limited largely to attempting “to prevent rare species from becoming extinct,” i.e., protecting the large bird rookeries. Both the FWS and NPS expected that a national park would be established within ten years and that no development to accommodate visitors would occur until the NPS was in charge. Managers in the Department of the Interior wanted Dan Beard, who was familiar with the area from his work on the 1938 *Wildlife Reconnaissance* (see Chapter 4), as refuge manager. Beard had been drafted into the U.S. Army in March 1944 and was stationed at Fort Bliss, Texas, as a training sergeant in early 1945. It required two letters from Secretary of the Interior Ickes to the secretary of war, Henry Stimson, to get Beard discharged from the army. In January 1945, before Germany had surrendered, Stimson refused to let Beard go. Ickes wrote again in late May after Germany’s surrender, but the army waited until Japan’s surrender in August, finally discharging Beard in October. At the time of his discharge, Beard was stationed at Alamogordo Army Air Field (later renamed Holloman Air Force Base).²⁵⁵

²⁵⁴ Because of the discontinuous array of parcels, no map of the preserve seems to have been prepared; at least, none has been located.

²⁵⁵ “U.S. to Supervise ‘Glades Game Refuge,’” *Miami Daily News*, Apr. 30, 1945; SOI Harold L. Ickes to Secretary of War Henry L. Stimson, May 30, 1945, EVER 22965; “Appointments to Everglades National Park Positions,” DOI press release, Sept. 23, 1947, CP, EVER 22204; personal communication, Albert Beard to Nancy Russell, Mar. 19, 2011. Dan Beard’s son Albert notes that the family was living in Cloudcroft, New Mexico, in summer 1945 not far from the site of the first atomic bomb test, the Trinity test.



Figure 5-1, Airboat

On October 26, 1945, Dan Beard took charge as manager of the Everglades National Wildlife Refuge from interim manager Claude F. Lowe Jr. Beard was able to set up his office at a USDA plant introduction facility in Coral Gables, known as Chapman Field because of an adjacent airstrip. The following February, Beard filed a report with the FWS regional office in Atlanta. He noted that the increased use of airboats and Glades buggies was making access to remote areas of the Everglades considerably easier. Airboats were developed by mounting an airplane propeller on a shallow draft boat, allowing for high speed travel in shallow waters (figure 5-1, Airboat). A Glades buggy, known sometimes as a swamp buggy, used oversized balloon tires set high off the ground, permitting overland travel in marshy areas (figure 5-2, Glades buggy with treads). These innovative vehicles made it easier for wardens to patrol deep in the Everglades, but they likewise provided access for hunters and plant collectors. Beard thought that Glades buggies should be banned in the refuge and the use of airboats limited. The new refuge manager also forwarded a wish list of desired equipment to his superiors. He wanted an airplane, two cabin cruisers, a houseboat, two Glades buggies, one or two airboats, three trucks, and a station wagon. During the period that it patrolled in the Everglades, the FWS gave greatest attention to protecting rookeries. Wardens also tried to discourage the taking of deer and alligators and achieve better enforcement of state fishing regulations. To make this easier, in October 1946, Governor Caldwell established a state game refuge in the Everglades and deputized Beard and his small staff as state conservation agents. The commissions went to Claude F. Lowe Jr., Jack C. Watson, and James V. Kellum. Another warden was Marcus Barney Parker, who already had a state commission, having protected rookeries as an Audubon warden. Barney would later become an NPS Everglades ranger.²⁵⁶

²⁵⁶ Refuge Narrative Report, Everglades NWR, Oct.–Dec., 1945, EVER 308034; “New Manager of the Everglades National Wildlife Refuge is Daniel B. Beard,” *Miami Herald*, Dec. 12, 1945; RDR1 Allen to Dir. Drury, Oct. 25, 1946, NARA Ph, RG 79, 79-67-A-1022, box 100; Daniel Beard, Report on Everglades NWR, Feb. 11, 1946, EVER 30803; Daniel Beard, Special Report on Concessions at Everglades National Park, July 28, 1953, NARA Ph, RG 79, 79-62-A-420, box 3; J. T. Hunt, Supervisor, Florida Game and Fresh Water Fish Commission, to Dan Beard, Oct. 29, 1946, Gov. Caldwell papers.



Figure 5-2, Glades buggy with treads

The FWS had wardens based at Royal Palm State Park, at a private fish camp on Coot Bay, and in the keys. Refuge Manager Beard saw educating the public as a major part of his responsibilities. He preached conservation everywhere that he went. Additionally, he attempted to persuade commercial fishermen to abide by the state regulations governing fishing in Florida Bay, something that the NPS felt the state had never pursued. Beard's staff worked with state wardens to identify and confiscate illegal nets and made some progress with fishermen. Beard established a working relationship with Kenneth Marmon, superintendent of the Bureau of Indian Affairs Seminole Agency at Ft. Myers. He was clearly looking ahead to the time when the national park would be established and decisions would need to be made about Indian camps within the park boundary. In the winter of 1946/47, the National Audubon Society began offering to the public, for a fee, guided tours of some of the bird rookeries in the Everglades refuge (see Chapter 20). The tour leader was typically Charles M. Brookfield, head of the Tropical Audubon Society. With the FWS barely able to provide protection for the bird rookeries, this visitor-oriented activity by Audubon was welcome. Seasonal Audubon tours continued through the winter of 1960/61.²⁵⁷

²⁵⁷Daniel Beard, Refuge Manager, to Lloyd L. Smith Jr., Biologist, May 13, 1947, NARA Ph, RG 79, 79-58A-360, box 8; Thomas Allen, RDR1, to Dir., May 13, 1947, NARA Ph, RG 79, 79-58A-360, box 7; Pamphlet "Tropical Wildlife Tours, 1950-1951 Season," CP; SMR, Nov. 1962.

As detailed in Chapter 4, Secretary of the Interior Julius Krug declared the establishment of Everglades National Park on June 20, 1947. The FWS would continue to patrol areas that had not yet come into federal ownership (Florida Bay in particular) until spring 1950 while the NPS began the task of asserting control of a new national park and planning its development. NPS managers seriously considered two men as possible park superintendents: Dan Beard and C. Ray Vinten. Region One Director Thomas J. Allen noted that at one time Vinten might have been interested in the post but that he was finding his role as coordinating superintendent for southeastern parks and monuments increasingly rewarding and had firmly rooted himself in St. Augustine with the purchase of a house. Allen further observed that Beard “is more thoroughly acquainted with the area than any other person either in or outside the Park Service.” Dan Beard was also well known in the NPS because of his father’s prominence as a conservationist. The regional director called Beard “a natural for the position.” Director Drury agreed and announced Beard’s appointment as the first superintendent of Everglades National Park on September 23, 1947. Gerald F. Baker then became the manager of the Everglades National Wildlife Refuge.²⁵⁸

Planning the Dedication of Everglades National Park, December 6, 1947

One of the first tasks confronting Dan Beard was planning for the official dedication of the new park. Beard would have preferred to defer the ceremony until the park had built some facilities to accommodate visitors, but public sentiment in Florida demanded an early dedication (figure 5–3, Program for Everglades National Park dedication). The state was proud of its \$2 million appropriation for land acquisition and believed it should be recognized with a prominent and timely park dedication. Secretary of the Interior Krug agreed that an early dedication was desirable. Because the newly established park had a small staff and limited appropriations, the Everglades National Park Commission (ENPC) stepped in, making most of the arrangements and paying for many of the expenses of the dedication. From the very beginning, all of the relevant players believed in the unmatched promotional value of having President Truman speak at the dedication. The president had established a Winter White House not far away at Key West, making it more likely that he could fit in a visit to the Everglades for the dedication. As late as November 17, Truman was unwilling to commit to an appearance, partly because of a special session of Congress, but he finally agreed to attend.²⁵⁹

²⁵⁸ RDR1 Thomas J. Allen to Dir. Drury, Apr. 22, 1947, EVER 22965, ser. I, subser. A, box 2; “Everglades Park Staff Appointed,” *Miami Herald*, Oct. 10, 1947. Soon after his appointment, Beard recalled the kindnesses extended to him as a 14-year-old when he visited Yellowstone National Park during Horace Albright’s superintendency. Daniel B. Beard to Horace Albright, Dec. 11, 1947, NARA II, RG 79, NPS CCF, box 904.

²⁵⁹ “U.S. Creates Glades National Park,” *Miami Herald*, June 21, 1947; ENPC Executive Committee Meeting, Sept. 25, 1947, EVER 58941; Ken Hechler, “My View from the White House—Truman’s Environmental Legacy Is Being Exaggerated,” in *The Environmental Legacy of Harry S. Truman*, Karl Boyd Brooks, ed. (Kirksville, MO.: Truman State University Press, 2009), 112.

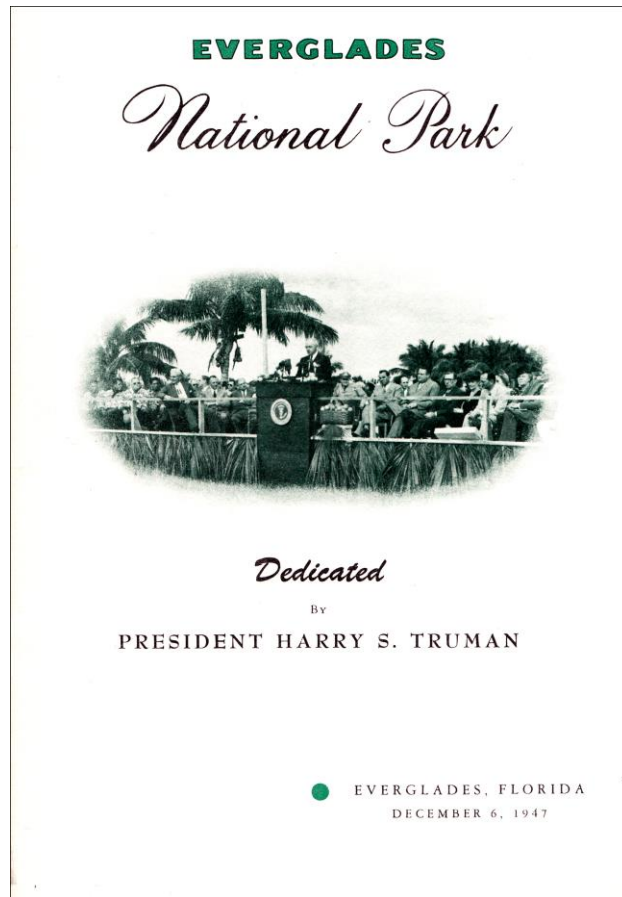


Figure 5–3, Program for Everglades National Park dedication

Following some informal discussions about the dedication, the ENPC executive committee on April 26, 1947, formed a special dedication committee. The committee was chaired by McGregor Smith of FP&L and had Harold Colee, G. G. Ware, Karl Bickel, Joe Hall, and Kennard Johnson as members. ENPC chair August Burghard and executive committee members John Pennekamp, Will Preston, and Gilbert Leach pledged themselves to assist in any ways they could. By the time the executive committee met again at the end of September, it had reasonable assurance that the president would be available, and December 6 was set as the date for the dedication. After discussing Royal Palm State Park, Hialeah Race Track, Crandon Park on Key Biscayne, and the Orange Bowl Stadium as possible sites, the committee agreed that “Everglades City would be the logical place for the dedication.” Miles Collier was a guest at this meeting, and his assurance of considerable financial and logistical support from the Collier Corporation surely played a role in this choice of venue. They quickly decided that there would be a fish fry for invited guests prior to the dedication, that Seminole Indians should be invited, and that the president would be entertained at the Rod and Gun Club in Everglades City (figure 5–4, Everglades Rod and Gun Club).²⁶⁰

²⁶⁰ ENPC Executive Committee Notes, Apr. 26 and Sept. 25, 1947, EVER 58941.



Figure 5-4, Everglades Rod and Gun Club

Further planning for the dedication took place at a combined meeting of the ENPC executive and dedication committees on-site in Everglades City on October 19, 1947. Superintendent Beard, Regional Director Allen, and Ray Vinten all attended the meeting, held at the Everglades Rod and Gun Club. After inspecting several sites, the group decided that the dedication would take place about a mile south of the center of town “at the bend of the river, north of the airstrip.” A local arrangements committee headed by Miles Collier, as well as a program committee and an invitation committee, both under John Pennekamp, were established. McGregor Smith reported that plans for the fish fry were well in hand, and Collier agreed to contact the Ringling Brothers Circus in Sarasota to borrow bleachers, folding chairs, and a tent (to be used in case of rain). Two more meetings in Miami in October and November resulted in additional decisions, including that a select group would have lunch with President Truman at the Rod and Gun Club. John Pennekamp announced “that it was decided to serve dry martinis before the Club luncheon.” Later, in 1972, a newspaper reported that a silver dollar was embedded in the club’s bar counter, marking the spot where Truman set down his cocktail. Subsequent remodelings at the club have left no trace of this unique memorial. Consultations among the Secret Service, the Florida Highway Patrol, the U.S. Navy, and the Collier County Sheriff helped to ensure the safety of both the president and visitors. Later reports indicated that the Secret Service demanded that several bridges on the Tamiami Trail between Naples and the road to Everglades City be repaired before the event.²⁶¹

²⁶¹ Meeting of ENPC Program and Invitation Committees, Oct. 28, 1947, Meeting of ENPC Executive Committee, Nov. 26, 1947, EVER 58941; Tom Morgan, “HST Came to Park’s Dedication in Moment of High Drama Here,” *Miami Herald*, Dec. 27, 1972. The *Miami Herald* made reference to an “Amazon Brigade” of 50 African-American women who were working to prepare the site for the dedication, “Everglades Scrubs Ears for Gala Day,” undated article [Nov. 1947], EVER 42054.

Everglades National Park Commemorative Postage Stamp

On the day before the dedication, a U.S. commemorative postage stamp honoring Everglades National Park was issued at the Florida City Post Office. The decision to issue the stamp, which added considerably to the national attention given to the park's dedication, arose from discussions involving Florida Power & Light's chief legal representative, Will M. Preston. One of Preston's legal partners, Paul R. Scott, was a good friend of Postmaster General Robert E. Hannegan.²⁶² Scott obtained Hannegan's backing for the stamp, and the entire Florida congressional delegation lined up behind it. Through the efforts of John Pennekamp, Garnett Megee, a Miami artist and former employee of the U.S. Bureau of Engraving, was commissioned to design the stamp. Megee's design featured a great white heron with the map of Florida as a backdrop. Superintendent Beard approved the representation of the heron. A ceremony in Florida City on December 5, 1947, marked the first day of issue of the Everglades commemorative three-cent stamp (figure 5-5, First day cover, Everglades stamp). Regional Director Allen and Governor Caldwell spoke to attendees, and the Homestead High School Band played musical selections. Third Assistant Postmaster General Joseph J. Lawler presented special albums containing stamps to Governor Caldwell, Senator Holland, Paul Scott, Will N. Preston, and John Pennekamp. First-day cancellations of the Everglades stamp totaled 466,647, and 802,500 stamps were sold, bringing in \$24,075 to the federal treasury.²⁶³



Figure 5-5, First day cover, Everglades

²⁶² Hannegan was postmaster general from May 1945 to December 1947.

²⁶³ "Local Artist Designs Glades Park Stamp," *Miami Herald*, Sept. 3, 1947; SMR, Dec. 1947; "Florida City Celebration Rate [sic] as Gateway," *Miami Daily News*, Dec. 6, 1947.

The Publication of *The Everglades: River of Grass*

Another event that added to the éclat of the park's dedication was the publication the previous month of Marjory Stoneman Douglas's book, *The Everglades: River of Grass*. From early on, Douglas had supported the creation of a national park in the Everglades and had maintained her membership in the ENPA. Throughout the 1930s and early 1940s, she pursued a very successful career as a writer of short stories, several of them set in the Everglades. She had not, however, been a leader in lobbying federal and state officials on behalf of a national park. That she ended up writing the most celebrated and widely read book on the Everglades may almost be said to have been a result of happenstance (figure 5–6, Marjory Stoneman Douglas).²⁶⁴

Douglas's friend, the novelist Hervey Allen, was co-editor of the Rivers of America series published by Farrar and Rinehart. Allen had a winter home south of Miami on the edge of the Everglades.²⁶⁵ One day in 1943, he visited Douglas and asked if she would be interested in writing a book on the Miami River for the series. As she considered the idea, Douglas thought she could write a far more compelling book about the Everglades, with the tiny Miami River included as a sidelight. John Pennekamp of the *Miami Herald* put her in touch with Garald Parker, a U.S. Geological Survey scientist then studying the water supply for the cities of Southeast Florida. As Douglas remembered it, she asked Parker, "Do you think I can get away with calling it the river of grass?" He replied that he thought so. Douglas spent the next three years researching and writing the book, relying heavily on Parker's insights on the hydrology and ecology of the Everglades. Among many others, she also consulted archeologist John M. Goggin, C. Kay Davis of the U.S. Soil Conservation Service, local naturalists David M. Fairchild and Dr. John C. Gifford, and David O. True of the Historical Association of South Florida.²⁶⁶

²⁶⁴ Davis, *Everglades Providence*, 310–26, 394.

²⁶⁵ Allen burst upon the literary scene with his hugely successful 1933 historical novel, *Anthony Adverse*, which sold more than 750,000 copies in its first three years. James D. Hart, *The Popular Book: A History of America's Literary Taste* (Berkeley: University of California Press, 1950), 261–62.

²⁶⁶ Davis, *Everglades Providence*, 357–362; Marjory Stoneman Douglas, *The Everglades: River of Grass, 60th Anniversary Edition* (Sarasota: Pineapple Press, 2007), 386–90; Marjory Stoneman Douglas, with John Rothchild, *Voice of the River: An Autobiography* (Englewood, FL: Pineapple Press, 1987), 190–92.



Figure 5–6, Marjory Stoneman Douglas

Combining ethnography, history, geography, and natural history, Douglas’s book appeared in early November 1947 to rave reviews. Farrar and Rinehart’s first printing of 7,500 copies sold out by Christmas, and *The River of Grass* has not been out of print since. *The Reader’s Digest* published a story from the book, “An Early Pocahontas,” in its December 1947 issue. Noted authors, such as John Hersey, Marjorie Kinnan Rawlings, and Harnett T. Kane wrote glowing notices. Writing in the *New York Herald Tribune*, Pulitzer-Prize winner Hersey observed that Douglas “has put into this description an unearthliness, a strong rhythm, a compactness of natural imagery that is dazzling, and, above all, an organization and discipline that approaches poetic form.” The most knowledgeable reviewer was Dr. Junius E. Dovell, writing in the *Florida Historical Quarterly*. Dovell had recently completed a doctoral dissertation on the history of the Everglades, one that remains useful to this day. Dovell pointed out a number of errors in the book, which Douglas corrected in subsequent editions. Overall, he was complimentary, concluding that the book was “an outstanding contribution to the growing body of published Floridiana, one that is greatly needed.” Because Douglas’s book so thoroughly satisfied the public’s demand for a book on the Everglades, Dovell was never able to find a publisher willing to turn his meticulously documented dissertation into a book.²⁶⁷ Published just as the park was dedicated, *The Everglades: River of Grass* brought a great deal of positive attention to the area, surely motivating many Americans to visit the new national park.

²⁶⁷ Davis, *Everglades Providence*, 394–96; John Hersey, *New York Herald Tribune*, Dec. 7, 1947; Junius E. Dovell, *Florida Historical Quarterly* 26/3 (1948):275–78.

Dedication Day, December 6, 1947

To protect the crowd at the dedication ceremonies at Everglades City from mosquitoes, U.S. Navy aircraft sprayed DDT on 500 acres surrounding the Everglades airstrip. Although the toxicity of DDT and other pesticides was little understood at this time, at least three Florida residents wrote letters complaining of the effects of the spraying on wildlife. Herman C. Shuptrine of Tampa called it “a slap in the face of every conservationist . . . in the State of Florida.” NPS Director Drury looked into the matter and concluded that because the dedication site was twenty-two miles from the nearest park lands, it “could have no possible effect on the Park.”²⁶⁸

December 6 was a typically sunny, late fall South Florida day. President Truman arrived in Naples from Key West on his plane, the *Sacred Cow*. On the tarmac to meet him was Governor Caldwell. The president was behind the wheel as the motorcade set off for Everglades City, where Secretary Krug and Senators Holland and Claude Pepper were waiting. In Everglades City, William McKinley Osceola, Cory Osceola, and Ingram Billie gave Truman a traditional Seminole shirt, sewn by William’s wife from 5,000 pieces of cloth (figure 5–7, Miccosukee Indians presenting shirt to Truman). The Indians later presented similar shirts to Secretary Krug and Superintendent Beard (figure 5–8, Miccosukee shirt given to Dan Beard).²⁶⁹ They also presented a handbag of palmetto fibers with buckskin handles for Mrs. Truman and a tribal flag that the president said he would pass on to his daughter, Margaret. At the dedication grounds near the airstrip, some 2,000 people enjoyed fried mullet, hush puppies, beans, coleslaw, and pickles. Meanwhile, the presidential party had cocktails, stone crab, key lime pie, and a large cake in the shape of the Florida peninsula at the Rod and Gun Club. Truman and the VIPs arrived ten minutes early at the temporary grandstand that had been prepared, and the formal dedication events kicked off promptly at 2:00 pm.

²⁶⁸ “DDT Spray Planned for Park Area,” *Miami Herald*, Dec. 4, 1947; Herman C. Shuptrine to Congressman J. Hardin Peterson, Dec. 5, 1947; Congressman J. Hardin Peterson to Charles DeArmas, Feb. 6, 1948, Peterson papers, box 34. Marine biologist Rachel Carson brought attention to the devastating effects of DDT on wildlife in *Silent Spring*, which was serialized in *The New Yorker* in spring 1962 and published in book form that fall. More than ten years later, the U.S. Environmental Protection Agency banned almost all uses of the pesticide in the United States, effective Jan. 1, 1973. Peter J. Bernstein, “Farewell, DDT,” *Miami Herald*, Dec. 12, 1972.

²⁶⁹ Dan Beard’s colorful shirt is now in the collection of the South Florida Collections Management Center.

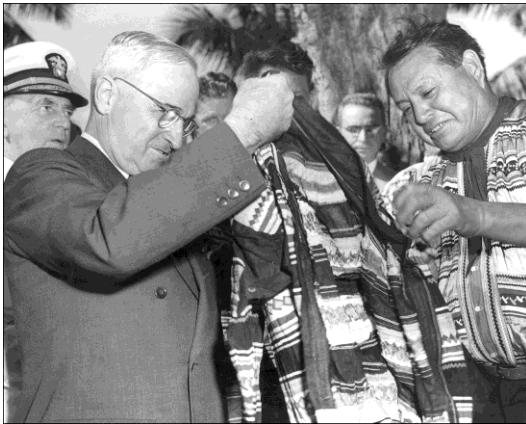


Figure 5-7, Miccosukee Indians presenting shirt to Truman



Figure 5-8, Miccosukee shirt given to Dan Beard

Master of Ceremonies John Pennekamp first introduced Deaconess Harriet M. Bedell, of the Glade Cross Mission in Everglades City, who gave the invocation.²⁷⁰ August Burghard then presented a plaque in the shape of the park to Ernest Coe, whose bitterness over not getting the larger park that he dreamed of made him a reluctant participant in the dedication. Coe later acknowledged to Burghard that he had to be persuaded to come forward but that “in being human I loved it and thank you.” Director Drury recognized the pioneering efforts of the Florida Federation of Women’s Clubs in establishing and safeguarding Royal Palm State Park. Jennings was an honored guest, and Drury presented a plaque to her. Senators Pepper and Holland made brief remarks, Governor Caldwell formally presented the area on behalf of the state, and Secretary Krug formally accepted it on behalf of the federal government. The president’s address came next, followed by the benediction, given by the Reverend E. A. Finn, and the singing of the national anthem by Wah Nese Red Rock, a member of the Ojibwa Totem Tribe who lived in Florida at the time (figure 5-9, President Truman dedicating Everglades National Park, Dec. 6, 1947). The Fort Myers High School Band played selections during the ceremonies. Attendance was estimated at 4,500 by the *New York Times* and 7,000 by the ENPC. The Florida Highway Patrol later announced that not a single automobile accident had occurred.²⁷¹

²⁷⁰ Bedell came to the Everglades in 1933 and received permission from the Episcopal Diocese of South Florida to establish a mission to the Seminoles (see Chapter 19).

²⁷¹ Program, Everglades National Park Dedication, Ernest F. Coe to August Burghard, CP, EVER 22847; “Wah Nese Red Rock; Singer and Indian Rights Activist,” *Los Angeles Times*, Jan. 9, 1988.



Figure 5–9, President Truman dedicating Everglades National Park, Dec. 6, 1947

Because Truman had waited until the last minute to confirm his attendance, his speech was not drafted in the White House but was prepared by the NPS. Beyond dedicating a new national park, President Truman reaffirmed his administration’s natural resource management goals and conservation policies in his address, which was printed in full by the *New York Times*. Truman called the park’s establishment “another great conservation victory” that “enrich[ed] the human spirit.” He went on to emphasize the importance of conservation of natural resources to the nation’s economic well-being. The President noted that “[f]ull conservation of our energy resources can be accomplished by continued construction of dams, hydroelectric plants, and transmission lines; by greater use of natural gas.” As historians, such as Karl Boyd Brooks have shown, the Truman administration departed from the Roosevelt administration in emphasizing “wise-use” conservation over preservation, and the president’s remarks reflected this shift. Truman closed his address by reemphasizing the inspirational qualities of national parks:

As for conservation of the human spirit, we need places such as Everglades National Park, where we may be more keenly aware of our Creator’s infinitely varied, infinitely beautiful, and infinitely bountiful handiwork. Here we may draw strength and peace of mind from our surroundings.²⁷²

²⁷² “President Pleads for Conservation,” *New York Times*, Dec. 7, 1947. See Karl Boyd Brooks, *The Environmental Legacy of Harry Truman* on Truman’s natural resource policies.

The NPS, the ENPC, the Florida Democratic Party, and the state's newspapers all seemed very pleased with the park's dedication and the coverage it received. Portions of the ceremony, including the presidential address, were broadcast nationally by the National Broadcasting Company and the Mutual Broadcasting System (figure 5–10, Audience at park dedication). Everyone from the Collier Corporation to the Florida National Guard seemed eager to make the day a success. Contributions to the dedication from companies and individuals were valued at \$2,138, equivalent to almost \$23,000 in 2014. In addition to underwriting the fish fry and other expenses, the ENPC gave all the surplus plywood and other salvageable materials from the event to the park.²⁷³

²⁷³ Miles Collier to Gilbert D. Leach, Managing Director, ENPC, Dec. 12, 1947, Gov. Caldwell papers, box 26; ENPC Meeting Minutes, Jan. 11, 1948, EVER 58941.



Figure 5–10, Audience at park dedication

Ernest F. Coe: A Summing Up

Ernest F. Coe, consistently regarded since 1947 as the father of Everglades National Park, lived to see its first three years of operation (figure 5–11, Ernest Coe letter with his customary leaf). He never stopped urging the NPS to move immediately to acquire all the land within his original boundary. As he had with hundreds of others, Coe called on Superintendent Beard to share his thoughts on the Everglades. Coe was increasingly embittered and impoverished in the last years of his life. After his wife died in July 1940, Coe invited a Mr. and Mrs. Hane, who had worked in various capacities on his property, to live with him. The Hanes stayed on for more than 10 years, cooking, cleaning, and caring for him. Toward the end of Coe’s life, they also apparently covered his living expenses and loaned him money. Coe believed that the ENPA and ENPC owed him something like \$25,000 in back salary. The bulk of this was due from the ENPA; as of February 5, 1948, Coe calculated that the association owed him \$13,949.08. For about two years, until Governor Cone demanded his resignation, Coe drew \$4,000 a year as executive chairman of the ENPA, at a time when the median family income in the U.S. was \$1,160. Surviving records do not indicate Coe’s annual ENPA salary and how often the salary could not be paid. The association did pay his travel expenses and the

maintenance on his private automobile for extended periods.²⁷⁴ At times, Coe seemed to think the federal government also was in his debt, noting that “another plan is to ask Congress for an annuity for me on the basis that I have done a great national service.” Within six months after the park’s dedication, Coe’s friends were seriously concerned about Coe’s finances and mental state. In June 1948, Pennekamp wrote Regional Director Allen, “He has a great many people disturbed down here with almost daily threats that he is going to commit suicide because he has no money and has exhausted all of his resources.” Shortly thereafter, Allen noted that “Florida people knew Coe was a flop beyond his persistence about the park idea. . . . He has acquired a ‘big head’ and lost most of his friends in the active groups.”²⁷⁵

Many in the Miami area tried to help Coe, but he was a proud man and refused most assistance. He accepted fairly regular checks from family members in other parts of the country, but the Rotary Club of Miami and others resorted to subterfuge to assist Coe. The Rotarians, for example, paid to have the garage on Coe’s lot renovated to rent out as an apartment. Finally, the NPS came up with a way to help that was acceptable to Coe; he was hired as a “collaborator” to work on a chronological history of Everglades National

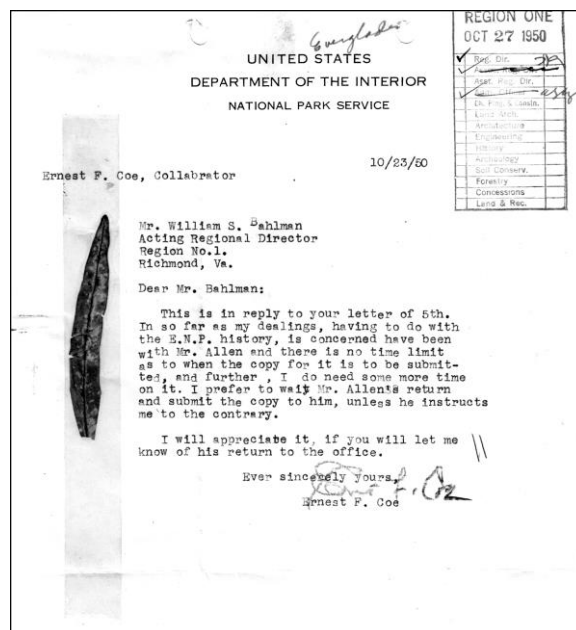


Figure 5–11, Ernest Coe letter with his customary leaf

²⁷⁴ During the three and a half years from Dec. 1928 to May 1932, the ENPA paid \$1,508 (2014 equivalent \$21,500) for Coe’s gasoline and automobile maintenance. Clifford Bourne to David Fairchild, president, ENPA, June 23, 1932. NARA II, RG 79, CCF, box 234.

²⁷⁵ “Death Takes Mrs. E. F. Coe,” July 11, 1940, unidentified newspaper, EVER 42054; Ernest F. Coe to Alice and Ed, Jan. 30, 1948, and Oct. 16, 1948, CP, EVER 22883 and EVER 22884; ENPA Financial Statement, Feb. 5, 1948, CP, EVER 22638a; John Pennekamp to RDR1 Allen, Apr. 13, 1948, NARA Ph, RG 79, 79–58-A-360, box 8; RD Allen to NPS Chief of Lands Conrad Wirth, July 14, 1948, NARA II, RG 79, GF, box 924.

Park. He eventually received about \$1,000 for this work. His “Story of the Everglades National Park Project from the Inception of the Idea, Including Its Establishment and Dedication” may be consulted in the South Florida Collections Management Center. Although financial compensation proved meager, honors came Ernest Coe’s way in his last years. The Massachusetts Horticultural Society bestowed its highest award, the George Robert White Medal, on Coe in 1948. The Fairchild Botanical Garden gave him its Thomas Barbour Medal, and in 1947, Dade County made him one of its Citizens of the Year. Shortly after delivering the manuscript of his park history to the NPS, Coe became ill. He went into the hospital in December 1950 and died on January 1, 1951, at age 84.²⁷⁶

Horace Albright captured Ernest Coe’s place in the Everglades National Park story as well as anyone, when he wrote him at the time of the park’s establishment:

I wanted to . . . salute you as the man that not only dreamed of this great park, but planned it and through many years of discouragement and disappointment that would have caused a less farseeing and courageous man to drop the project, carried on and won the victory for the American people. . . . [H]ad it not been for John Muir, there would have been no Yosemite. . . . and had it not been for Ernest F. Coe, there would have never been an Everglades National Park. So you join the immortals of the National Park System.²⁷⁷

Asserting National Park Service Authority Over the New Park

In March 1947, five months before beginning duty as Everglades National Park’s first superintendent, Dan Beard offered NPS Region One his thoughts on the protection and administration of the area as a park. Expanding the protection of wildlife and beginning a program of fire protection were his top priorities. Beard was already thinking in terms of three ranger districts (see Chapter 21). He submitted a wish list of required equipment similar to the one he had prepared for the wildlife refuge. In addition to standard ranger and clerical positions, Beard believed that the park needed a naturalist, an aquatic biologist, and a landscape architect. Among the projects he thought immediately necessary were the plugging of the Cape Sable canals to retard salt water intrusion, establishing a ranger station at Shark River, repairs to the Ingraham Highway, and the partial backfilling of the Homestead Canal. Other tasks confronting the new

²⁷⁶ Ernest F. Coe to members, ENPA, Mar. 19, 1948, Gov. Caldwell papers, box 26; Ernest F. Coe to Ed and Catherine, Jan. 29, 1949, CP, EVER 22822; Ernest F. Coe to NPS Acting Dir. Demaray, Aug. 8, 1949, NARA II, RG 79, NPS AF, box 1407; H. L. McCay, Sec., Rotary Club, to Louis A. Miller, University of Miami, Apr. 14, 1950, CP, EVER 22604; Alice Bennes to Friend, Jan. 4, 1951, CP, EVER 22863.

²⁷⁷ Horace Albright to Ernest F. Coe, July 5, 1947, NARA Ph, RG 79, 79–67-A-1022, box 100.

superintendent and his staff were finding a site for park headquarters, working with the NPS land office in identifying and contacting land owners, and assisting visitors.²⁷⁸

Beard had been managing the wildlife refuge from an office in Coral Gables, but headquarters for the park could not be that far away. The superintendent was able to rent offices as well as garage and shop space in the Redlands Chamber of Commerce building at 65 Northeast First Avenue in Homestead, moving into these facilities in November 1947. This remained headquarters until June 1953. A small staff was also assembled: James H. Smith came on as chief clerk in September 1947 and Willard Dilley and Erwin Winte as the park's first two rangers in October. Until September 1948, the park's accounting and personnel functions were handled by the office of southeastern parks and monuments in St. Augustine. Appropriations for the park were \$67,000 in fiscal year (FY) 1948 and \$103,000 in FY 1949.²⁷⁹ The NPS established a land office headed by L. M. Gray at Dinner Key in Coral Gables in September 1947. The activities of this office and the history of park land acquisition are covered in Chapter 6.²⁸⁰

By October 1947, NPS rangers were making boat patrols in cooperation with FWS wardens. As of spring 1948, rangers were working out of the old Royal Palm Lodge (renamed the Royal Palm Ranger Station) and at Coot Bay, but the NPS as yet had no jurisdiction over Florida Bay. In October 1948, Beard noted that the "appearance of Mrs. Barnes [wife of Ranger Paul Barnes] in an historically bachelor environment [Coot Bay Ranger Station] is resulting in many, worthwhile changes." The small NPS staff concentrated on protecting rookeries but did what they could to limit illegal alligator hunting, fishing, and frog gigging. Beard's early monthly reports note evidence of gator hunting and a confrontation with turtle hunters. Not until January 1949 were automobile counters installed, but Beard estimated visitation at 20,000 to 22,000 over the winter of 1947–1948. Visitors that first winter were reported to be largely understanding about the poor condition of the Ingraham Highway and the lack of restrooms and other facilities. By the second winter, however, Ranger Paul Barnes was reporting that "almost every visitor contacted complained bitterly about the unsafe condition of the road. . . . [A] continuing majority of visitors are irked by lack of concession facilities at this [Coot Bay] station." Rangers and the park naturalist gave programs at Royal Palm on weekends, but

²⁷⁸ Daniel B. Beard, A Proposal for the Protection and Administration of the Everglades National Park, NARA Ph, RG 79, 79–58-A-360, box 7.

²⁷⁹ The federal fiscal year (FY) differs from the calendar year. Until 1977, the federal fiscal year ran from July 1 to June 30. Beginning with FY 1977, this changed to October 1 to September 30.

²⁸⁰ SMR, Oct., Nov. 1947, Jan. 1948, July 1948, June 1953; Daniel B. Beard, A Report on Everglades National Park, July 14, 1948, NARA II, RG 79, NPS CCF, box 924; Daniel B. Beard, A Report on Everglades National Park, June 1947–April 1949, CP, EVER 20209a.

the interpretive program still needed outside assistance. Tropical Audubon continued its tours, and the ENPC produced the first park brochure in May 1948.²⁸¹

In the first years of administering Everglades National Park, the NPS faced a dilemma. There was considerable pressure from visitors and Florida opinion leaders to rapidly develop the park for visitor use. Land acquisition, however, was ongoing, so that any major improvements to Ingraham Highway or the addition of visitor facilities would almost certainly have driven up land values. How the NPS approached the responsibility of developing Everglades National Park is the subject of Chapter 7.

²⁸¹ SMR, Mar., Apr., July, Oct. 1948 and Jan. and May 1949; Daniel B. Beard, A Report on Everglades National Park, July 14, 1948; Daniel B. Beard to RDR1, June 13, 1949, NARA II, RG 79, NPS CCF, box 904.



**Wilderness on the Edge:
A History of Everglades National Park**

*Chapter 6:
Land Acquisition*

Chapter 6: Land Acquisition

As soon as Everglades National Park was established in June 1947, the NPS turned its attention to land acquisition. The NPS and the state understood that the 1947 minimum boundary, embracing 460,000 acres, was just a beginning and looked forward to a park of at least the 1.2 million acres as envisioned in the 1944 agreement brokered by Governor Holland. Because the \$2 million for land acquisition came from the state and not the federal treasury, lawyers in the Department of the Interior decided that additional legislation was needed to explicitly authorize the use of condemnation with the state-donated funds. For this reason, the NPS began negotiating with willing sellers while the Florida congressional delegation moved forward with the necessary legislation. As described below, the NPS was able to negotiate purchases for about 65 percent of the private land; the rest had to be acquired through condemnation. Federal legislation signed on October 10, 1950, provided the authority for condemnation (see Appendix A).²⁸² Because of pressure from land owners, the law also allowed owners to retain oil and mineral rights until 1958 and the right to receive royalties until 1985, if the federal government actually allowed oil production before the 1958 expiration date. With these issues resolved, the secretary of the interior in February 1950 issued an order expanding the size of the park to 1,228,500 acres. This order transferred to the NPS the areas still protected by the U.S. Fish & Wildlife Service and essentially confirmed the 1944 understanding between state and federal authorities.²⁸³

The NPS needed to purchase some 357,000 acres of privately held land to bring the park to the 1950 boundary. Some 85 percent of this acreage was held by just six absentee owners:

Model Land Company	210,000 acres
Palgrove Company	34,000 acres
Elizabeth Annat	28,000 acres
Sam and Harry Simonhoff	14,000 acres
Paradise-Prairie Land Company	13,500 acres
Dorothy Dewhurst Parker	10,000 acres ²⁸⁴

Clearly, the Model Land Company (MLC) holdings were key to the land acquisition question. If the NPS could negotiate what it considered to be a reasonable price with the MLC, this would establish a precedent for future purchases.

²⁸² P. L. 340, 81st Congress (63 Stat. 733), Oct. 10, 1949.

²⁸³ SOI Order No. 2555, Feb. 22, 1950; "Everglades National Park Enlarged," DOI press release, Mar. 5, 1950, CP, EVER 22385.

²⁸⁴ "Government Goes to Court to Get Glades Park Lands," *Miami Herald*, undated [May 1950], EVER 42054.

The NPS opened a land acquisition office in Coral Gables in September 1947, with Major Leon M. Gray as land acquisition project manager. Gray soon hired Albert B. Manly as a full-time appraiser and also used independent appraisers in Miami as contractors. Manly took over as manager upon Gray's death in January 1949. The office began examining titles, doing appraisals, and identifying land owners willing to sell at an acceptable price. The NPS was annoyed, but not slowed down, by lawsuits filed by Florida Attorney General J. Tom Watson. Watson was in his second term as state attorney general and planned to run for the governorship in 1948. He decided that branding the park's establishment a "federal land grab" would make a good campaign issue. Watson filed a number of lawsuits and appeals to try to stop the transfer of state lands to the federal government. All of the attorney general's arguments were rejected by the courts, and his opposition to the park seemed not to resonate with Florida voters. In May 1948, Jacksonville attorney Fuller Warren easily defeated Watson in the Democratic primary.²⁸⁵

In addition to the MLC holdings, two properties at Coot Bay emerged as top priorities for acquisition. Just as the park was being dedicated, two land owners at Coot Bay were in the process of developing commercial sportfishing camps. The NPS was eager to buy them out before they had added improvements that would drive up the price. Both owners agreed to sell at approximately the amount they had spent on the land and improvements. In early 1948, the NPS made these first two purchases from Mr. and Mrs. Louis Wilkerson and the Shark River Fishing Company for a total of \$28,310. The NPS then used this semideveloped area at Coot Bay as a temporary ranger station and visitor contact point until more permanent development was in place (see Chapter 7).²⁸⁶

Negotiations with the MLC began in late 1947. The property in question had been deeded by the state to Henry Flagler's Florida East Coast Railway in 1912 after the extension of the railroad to Key West.²⁸⁷ The railroad then sold the land to its real estate subsidiary, the MLC. The 210,000 acres embraced much of the land area of the park from about the latitude of the southern portion of Shark River. Albert Manly later described the negotiations as "detailed and spirited, albeit friendly." In November 1948, the company agreed to sell 135,000 acres for \$115,000. An additional agreement concluded in May 1949 conveyed the remaining 75,000 acres for \$180,000. The property was sold subject to existing oil exploration leases expiring in 1956 and 1958. Because of problems with previous surveys and the fact that as much as 50,000 acres actually lay under salt water,

²⁸⁵ A. B. Manly, "Acquisition of Lands for Everglades National Park," Feb. 29, 1956, NARA Ph, RG 79, NARA Ph, RG 79, 79-67-A-1022, box 50; C. R. Vinten to RDR1, Apr. 8, 1948, EVER 22965, ser. I, subser. A, box 2; SMR, April 1948.

²⁸⁶ A. B. Manly, "Acquisition of Lands for Everglades National Park," Feb. 29, 1956; Acting Assoc. Dir., NPS, to SOI, Oct. 30, 1948, NARA II, RG 48, DOI, Office of the SOI, CCF, box 3853; "Glades Park Land Purchased," *Miami Herald*, Nov. 7, 1948.

²⁸⁷ Flagler's agreement with the state called for the conveyance of 3,700 acres of state-owned land for every mile of track laid.

the company believed that only some 135,000 to 140,000 of the acres conveyed were surface land to which it had unimpeachable title. MLC Vice President Carl W. Hawkins predicted that other land owners would be upset by the “very nominal figure” the company had agreed to accept. The firm had compromised, he wrote, because it believed “the final development of the Everglades National Park will be a tremendous asset to the State of Florida and will . . . perhaps bring many millions of dollars into the State.” NPS acceptance of the MLC holdings subject to existing oil leases made it impossible for it to reject such encumbrances in future purchases.²⁸⁸

Most of the other major land owners were willing to sell at the prices the government offered, but none of the fish house proprietors at Flamingo were initially satisfied with the government’s offers. In addition to the MLC deal, other negotiated sales totaled about 20,000 acres. On May 8, 1950, the government filed a petition in condemnation in the U.S. District Court for the Southern District of Florida. Some 165 owners were involved, including the Palgrove Company, Elizabeth Annat, Paradise Prairie Land Company, Dorothy Dewhurst Parker, the Simonhoffs, and three owners of 51 acres at Flamingo. Included in this filing were a handful of tracts where owners had agreed to a purchase price but a court judgment was needed to clear up title problems. On December 4, 1950, Judge John W. Holland approved the government’s declaration of taking. After hearing the arguments of defendants who challenged the government’s map and property descriptions, Judge Holland on May 31, 1951, approved the map and set the stage for jury trials on appropriate compensation for the owners. Because 184 tracts of land totaling about 125,000 acres were involved, the judge split the proceedings into five separate jury trials. The compensation proceedings extended from November 1951 to January 1953.²⁸⁹

The Palgrove Company was awarded \$107,231 for its 33,870 acres in late 1951. The Simonhoffs settled for \$70,000 for their 14,353 acres in February 1952. In May 1952, Paradise Prairie Land Co. was awarded \$95,000 plus interest for its 13,500 acres. Dorothy Dewhurst Parker was awarded \$36,590 plus interest for her holdings. Both appealed on the basis that surveys had underestimated the acreage they owned, but the appeals were denied.²⁹⁰

²⁸⁸ A. B. Manly, “Acquisition of Lands for Everglades National Park,” Feb. 29, 1956, NARA Ph, RG 79, 79-67-A-1022, box 50; Carl W. Hawkins, Vice President, Model Land Company, to John D. Pennekamp, Feb. 19, 1949, SLH papers.

²⁸⁹ A. B. Manly, “Acquisition of Lands for Everglades National Park,” Feb. 29, 1956; “Government Goes to Court to Get Glades Park Land,” *Miami Herald*, May 10, 1950. In some of the cases, a jury was required to physically inspect the properties under consideration. On one trip, a boat with jury members on board lost its way on a foggy evening. Rangers with walkie-talkies finally guided the vessel into Coot Bay about 1:30 in the morning. Judge Holland quipped that hung juries were no novelty but this was the first time he had lost one.

²⁹⁰ A. B. Manly to Dir., Dec. 25, 1951, A. B. Manly to Dir., Jan. 25, 1952, land ownership records, EVER 22965, series VI, box 2

The Last Days of Flamingo

By the late 1940s, commercial fishing was the chief economic activity in the village of Flamingo and on a smaller scale, at Snake Bight and Lostmans River. During World War II, an estimated one to one-and-one-half million pounds of fish annually went by truck via Ingraham Highway from Flamingo to Miami. NPS officials recognized that the fate of these communities, particularly Flamingo, posed issues of equity and public relations. Only four of the fishermen at Flamingo—Lloyd House, Mitchell House, Coleman Irwin, and Loren Roberts—owned property. The remaining residents there and at Lostmans River either rented or occupied the land as squatters. Loren Roberts, Lloyd House, and Coleman Irwin operated fish houses. In many cases, the fishermen who worked for them lived in houses for which they paid little or no rent. Superintendent Beard likened the situation to tenant farming because many of the fishermen remained perpetually in debt to the fish house owners for nets, gasoline, and other necessary supplies. In April 1948, Albert Manly counted 34 houses at Flamingo along with a number of docks and small outbuildings (figure 6–1, fishing village of Flamingo, ca. 1950). A September 1948 hurricane with a six- to eight-foot storm surge washed eighteen houses off their stilts, but most were quickly set up again.²⁹¹



Figure 6–1, fishing village of Flamingo, ca. 1950

²⁹¹ “Bird and Peters View Cape Sable Highway,” *Miami Daily News*, Apr. 2, 1943; Supt. Beard to RDR1, Aug. 21, 1947, NARA II, RG 79, NPS CCF, box 907; A. B. Manly to L. Gray, Aug. 30, 1948, A. B. Manly to Dir., Nov. 23, 1948, EVER 22965, ser. VI, box 3; SMR, Sept. and Oct. 1948.

Almost from the beginning, the NPS believed that the hamlet of Flamingo and its residents needed to be removed. Five years before the park was established, an NPS wildlife specialist wrote:

We believe that there will be no real conservation program until certain undesirables living in the village of Flamingo and at fishing camps along the west coast are removed. People in these “pest holes” are living off the country, taking alligators, crocodiles, waterfowl, wading birds, and fur-bearing animals. . . . Local people at times deliberately set fire to the glades causing considerable damage.²⁹²

For a short time, however, Superintendent Beard and others believed that the NPS’s promise to allow commercial fishing to continue in park waters might force them to allow at least the resident owners to remain, perhaps under special use permits. (See Chapter 13 for the evolution of NPS policy on commercial fishing.) Further conversations with the Flamingo residents and a growing realization that the fish houses could shift operations to sites outside the park changed attitudes. Additionally, the House and Roberts families saw an opportunity in the park’s establishment, and in the winter of 1948/49, they began selling beer and sandwiches and renting rooms to sportfishermen at Flamingo. This sort of “wildcat” concession operation went deeply against the NPS grain and reduced the organization’s willingness to allow anyone to remain at Flamingo. By March 1949, the NPS had reached a firm decision that the village of Flamingo would be removed.²⁹³

After accepting the government’s declaration of taking, Judge Holland ordered the Flamingo residents to leave by February 4, 1951. Coleman Irwin, whose parents settled at Flamingo before 1900, believed he was not getting proper compensation for his property. He wrote Senator Holland, “the people there [at Flamingo] are reconciled to having to give up their homes, but why cannot the U.S. government be fair and give the people a decent amount for their property?” Irwin and others filed appeals, and the judge extended the deadline to June 1, 1951. The House family moved its House Fishing Company to a Gulf Coast location near Marco. One owner and a number of nonowners stayed on, hoping for some kind of last-minute reprieve. Before and after the June 1 deadline, Flamingo residents asked NPS authorities and politicians that they be allowed to stay.²⁹⁴ They also sent an unsigned letter to Superintendent Beard:

²⁹² James O. Stevenson, NPS Wildlife Section, to Ben Thompson, Asst. to Dir., July 26, 1942, NARA II, RG 79, NPS CCF, box 920.

²⁹³ Supt. Beard to RDR1, Aug. 20, 1947 and Apr. 17, 1949, EVER 22965, ser. VI, box 2, 3; SMR, Apr. and May, 1949, June 1951.

²⁹⁴ Coleman Irwin to Sen. Holland, June 26, 1951, SLH papers, box 254; SMR, Dec. 1950, June 1951.

Everglades National Park Service –

We the fishermen of Flamingo have no place to go or any place to stay. Our fish haulers have refused to bring us any groceries—gas or any other supplies. We have no other way of making a living.

We the fishermen of Flamingo will be up with our families at the office of the Everglades National Park office [*sic*] at 10-o'clock Saturday—June 2, 1951 for information as to where we are to go and what to do and how to take care of our families.

We feel that if the Park Service is taking our homes and our way of making a living, we think they should give us our places here to stay as this is the only place we know how to make a living.²⁹⁵

Nothing found in NPS records indicates whether this meeting took place or what might have been said. After June 1, rangers pressured the remaining residents to leave, and Superintendent Beard reported all were gone by the end of the month, leaving “dilapidated shacks, filth, and rusting iron” (figure 6–2 abandoned automobile at Flamingo). He noted that three residents tore down the park’s gate and sign as “a last act of defiance.” The men were called before the U.S. attorney in Miami, lectured, and let go. Loren Roberts’s wife, Effie, later recounted that her husband had wanted to shoot it out with the NPS, but she dissuaded him. The Roberts family maintained that the NPS burned their Flamingo buildings in the dead of night. Charter boat captain John Scudder claimed that Dan Beard personally set fire to the first two Flamingo buildings. Others recollect that Flamingo residents burned many buildings themselves out of anger at being ejected. In January 1951, the regional office had approved Superintendent Beard’s proposal to eliminate “by burning if necessary” all structures at Flamingo not useful to the service. Beard opted to retain two Flamingo houses. The Coleman Irwin House served as the Flamingo ranger station in the 1950s and was razed following Hurricane Donna in 1960. Another house that had been used as “an interpretive display” was burned by rangers in October 1957.²⁹⁶

²⁹⁵ Undated attachment to Supt. Beard to RDR1, June 4, 1951, NARA Ph, RG 79, 79–67-A-1022.

²⁹⁶ Supt. Beard to A. B. Manly, June 20, 1951, EVER 22965, ser. VI; Jean Taylor, *Villages of South Dade* (St. Petersburg, FL: Byron Kennedy & Co., 1986), 225; SMR, June 1951, Oct. 1957.

As for the other, smaller commercial fishing communities, by July 1950, the E. C. Knight Fish Company had moved from Snake Bight to Tavernier in the keys. None of the fishermen who lived in houses or houseboats near the mouth of Lostmans River owned any property there. The NPS considered them squatters, and they seem to have been evicted without much trouble or attention from the press.²⁹⁷



Figure 6-2 abandoned automobile at Flamingo

The Flamingo property owners were ultimately paid by the government for their tangible losses. The NPS believed that the fish house owners were exaggerating the profits that they made. Government lawyers therefore obtained copies of tax returns from the Internal Revenue Service to learn what income the fish house owners were reporting. The forcible eviction of the Flamingo community left bitter feelings that remained for decades (see Chapter 19).

²⁹⁷ In June 1949, Superintendent Beard listed ten residents at Lostmans River: Eugene Hamilton Sr., age 60; Eugene Hamilton Jr., age 25; F. E. Williams, age about 60; Roy Priest, age 25; Henry Hamilton, age 42; Louis McBean, age unknown; James Addison, age unknown; Leon Hamilton, age about 60; Walter Hamilton, age 71 (possibly no longer a resident). Supt. Beard to RDR1, June 15, 1948, NARA Ph, RG 79, 79-58-A-360, box 8; SMR, July 1950; "Old-Timer Misses the Flamingo That Was," *Miami Herald*, July 13, 1986.

Dr. Edwin Lunsford

An enterprising Miami dentist, Dr. Edwin Lunsford, hoped to build a luxury resort at Cape Sable, to be served by a road and other infrastructure supplied by the NPS. Dr. Lunsford purchased 1,200 acres, including about eight miles of beachfront, at Cape Sable in 1945 and 1947 for a total of \$61,600. The major section of beachfront was at Middle Cape. The second purchase came after Governor Caldwell had appointed Lunsford to the Everglades National Park Commission (ENPC) (see Chapter 4). Lunsford built a small frame house and an airstrip on his property so he could fly to and from Miami in his private plane (figure 6–3, Dr. Lunsford’s house at Cape Sable). As a member of the ENPC, Dr. Lunsford met several times with NPS officials from Region One and the Washington, DC office on various park matters. He was convinced that they had given him verbal assurances that he would be allowed to develop a major resort on some or all of the land that he had purchased. When Lunsford revealed his plans to Superintendent Beard and Land Acquisition Manager Manly they included “hotels, a bar, swimming pools, yacht basins, tennis courts, shuffle board, and perhaps a golf course.” As early as October 1945, John Baker of the National Audubon Society declared Lunsford’s resort a poor idea. He was particularly concerned over the potential impact on sea turtles that nested on the beach.²⁹⁸



Figure 6–3, Dr. Lunsford’s house at Cape Sable

²⁹⁸ “Cape Sable Land to be Developed,” undated [1947?] news clipping in EVER 22970; A. B. Manly to Dir., Jan. 19, 1952, EVER 22965, ser. VI, box 6; Supt. Beard to RDR1, Dec. 21, 1949, EVER 22965, ser. VI, box 2; John H. Baker, NAS, to Gov. Caldwell, Oct. 9, 1945, Gov. Caldwell papers, box 25.

It is impossible to determine what NPS officials said to Dr. Lunsford before the park was established. Given long-standing NPS policy on in-holdings, it seems highly unlikely that they gave any promise that he would be allowed to develop a private resort deep inside the park. More likely, Lunsford interpreted vague statements as promises, hearing what he wanted to hear. By September 1949, the NPS had decided it would purchase the doctor's land. He was invited to later bid on any concession opportunity that the service advertised. Dr. Lunsford was bitterly disappointed and wrote that he felt "rather stupid and betrayed." He tried to get Florida politicians to go to bat for him but was unsuccessful. Lunsford refused all government offers for his property, claiming it was worth \$600,000. The case was ultimately decided by a jury, which awarded him \$110,000 in January 1952.²⁹⁹

Everglades Hermits

Just a handful of residents were allowed to continue to reside within the new park, including two people who became known as the Everglades "hermits." Ed Braddock of Miami was not a hermit, but he was granted a special use permit to continue to use the Watson Place at Chatham Bend, where he stayed from time to time on fishing trips. His last permit expired in September 1956. Park managers continued to allow Braddock to use the place until the winter of 1959/60, when they learned that he was allowing friends to use the house on weekends. At that point, the superintendent barred Braddock from using the house. In September 1960 Hurricane Donna virtually destroyed the Watson Place, and the NPS apparently hauled away the debris.³⁰⁰

Arthur Leslie Darwin had been a trapper on Lostmans River from about 1935 to 1942, residing in the old Gene Hamilton Place. During World War II, he worked as a carpenter in Everglades City. In 1945, Darwin moved to Possum Key where he built a house of concrete blocks and mortar he made himself from sand and shells and purchased cement. The NPS acquired Possum Key when it purchased the Patton Tract in August 1951 (see discussion below). The service made some attempts to persuade Darwin to vacate but opted to let him stay, fearing adverse publicity. Darwin raised bananas, guavas, limes, and coconuts and traveled monthly to Chokoloskee to purchase supplies. The NPS got Darwin to sign a quitclaim deed in 1956, confirming that he had no ownership interest. Darwin left Possum Key for a houseboat in Everglades City in late 1972 because of

²⁹⁹ Albert B. Manly to Dir., Jan. 18 and 25, 1952, EVER 22965, ser. VI, box 6; Acting Dir. Demaray to Dr. Lunsford, Sept. 21, 1949, SLH papers, box 24; Dr. Lunsford to Sen. Claude Pepper, Oct. 6, 1949, NARA II, RG 79, NPS Dir. Recs., Drury, box 7.

³⁰⁰ ENP District Ranger Stokes to Chief Ranger, Nov. 19, 1959, Supt. Hamilton to G. J. Mission, May 13, 1960, ENP District Ranger Stokes to Supt., Oct. 9, 1960, EVER 22965.

advanced age and the loss of his banana and guava plants; he claimed to be 95 at that time. According to his son, Luke, Arthur Leslie Darwin died in 1977.³⁰¹

A second Everglades hermit, Roy Ozmer, said that he sought an isolated spot to live because he was unable to resist overindulgence in alcohol. In 1949, the trustees of Florida's Internal Improvement Fund granted Ozmer a ten-year lease at \$30 a year for Pelican Key. When Pelican Key was transferred to NPS ownership, Ozmer was allowed to remain under a special use permit. Although known as a hermit, Ozmer welcomed visitors. Most of the cast of the film *Winds Across the Everglades* visited him in 1954 after which he posted a sign on his property reading "Gypsy Rose Lee Slept Here." When Hurricane Donna destroyed his house in September 1960, Ozmer moved briefly to Erwin, Florida. He soon returned and built a house on Panther Key. When he became ill, he moved again to Erwin, where he died in 1969.³⁰²

Park Expansion in the 1950s

Although the National Park Service had accepted a compromise in 1944 that set a park boundary embracing about 1.2 million acres, it still hoped for a larger park. In particular, the service was interested in extending the Gulf Coast boundary, which in the 1944 agreement had been set just north of Lostmans River. The service was especially eager to include the major rookery at Duck Rock near Pavilion Key and the impressive Native American mounds along Turner River in the park. On the park's eastern edge, the NPS had reluctantly agreed to exclude land with agricultural potential near Royal Palm Hammock and now wished for some or all of this to come into the park. The agricultural acreage southwest of the hammock came to be known as the Hole-in-the-Donut because it was almost completely surrounded by NPS-owned park land. The service by this time had finally realized that an area of about 100 square miles south of the Tamiami Trail and west of Krome Avenue that was outside both the 1944 compromise line and the 1934 maximum boundary contained much of the headwaters of Shark Slough. Therefore, development in this area had the potential to seriously disrupt surface water flow into the park.

On the Gulf Coast, major land owner Barron Collier (1873–1939) had been opposed to including much if any of his land holdings in the Everglades National Park. Following World War II, Collins's sons, Miles, Sam, and Barron Jr., took a different attitude. They believed that the future of Everglades City, which their father had developed, was tied to

³⁰¹ DOI Asst. Solicitor Harry M. Edelstein to U.S. AG, Apr. 24, 1952, Asst. AG to DOI Solicitor, Jan. 1, 1957, NARA II, RG 48, DOI, CCF, boxes 433 and 3853; "Hermit Evacuates Home in Possum Key," *Florida Times-Union*, Dec. 1, 1972; Everglades City High School, *Hermits from the Mangrove Country of the Everglades, Prop Roots*, vol. II (Everglades City: Collier County Public Schools, 1980).

³⁰² Everglades City High School, *Hermits*; Acting Supt. to RDR1, June 21, 1960, Supt. Hamilton to Roy Ozmer, Dec. 23, 1960, NARA Ph, RG 79, 79-67-A-1022, boxes 64 and 116.

that of Everglades National Park. To help ensure that Everglades City would become the “western gateway” to the park, the Collier Corporation expressed a willingness to donate some 30,000 to 35,000 acres to the NPS. About two-thirds of this land lay outside of the 1934 maximum boundary (which stopped at Turner River) and would require additional federal legislation to be included in the park. The prospect of the Collier donation and the general NPS goal of enlarging the park led to extended discussions in the 1950s among NPS officials, Florida’s congressional delegation, and the Florida cabinet to reach a consensus on a new park boundary.

In June 1951, Superintendent Beard sent a letter to Governor Fuller Warren and the other four trustees of the IIF with a map showing approximately 400,000 acres that the NPS wanted to add to the park. The trustees then passed a resolution on June 21, 1951, agreeing to convey all state-owned lands within the expansion areas to the federal government. Many private land owners within the expansion areas and some hunters were strongly opposed to this expansion. The Colliers’ request that Chokoloskee Island be excluded was quickly agreed to by the NPS. The service understood that trying to remove the estimated 200 residents of the island would be a political headache. Monroe County officials believed that they had surrendered quite enough land to the park and agitated against any expansion. Governor Daniel McCarty, who succeeded Fuller Warren in January 1953, vetoed an act that Monroe County interests pushed through the legislature that would have barred the state from granting any more of its Monroe County land for the park. Through donations in 1951 and 1952, the Collier Corporation conveyed 32,000 acres in trust to the state to be turned over to the federal government for inclusion in the park. In the summer of 1951, an owner of 29,873 acres along the Gulf Coast that were outside the 1950 boundary but within the 1934 maximum boundary offered the tract to the NPS at a reasonable price. With the approval of state authorities, the NPS bought this tract of 29,873 acres, known as the Patton tract, for \$96,931.25. After purchasing the private holdings contained within the 1950 boundary and the Patton tract, the service had approximately \$325,000 remaining. To formally recognize all of these new developments, the NPS began drawing up a secretarial order to expand the park boundary.³⁰³

Governor McCarty died in September 1953, and Charley Johns took over the office until a special election could be held in 1954.³⁰⁴ Johns opposed further expansion of the park and wanted to retrieve oil rights on land the state had already conveyed to the NPS. In this environment and without consulting the NPS, the trustees of the IIF on January 19, 1954, rescinded their previous resolution of June 12, 1951, promising to convey additional state lands to the NPS. This followed their action in November 1953 granting a

³⁰³ Supt. Beard to Gov. Warren, June 7, 1951, SLH papers, box 343; Dir. Demaray to Miles Collier, June 19, 1951, Dir. Wirth to Gov. McCarty, Apr. 10, 1953, EVER 22965, Series VI, subseries B, box 2; Charles M. Brookfield, NAS, to Sen. Holland, June 17, 1953, SLH papers, box 298; Dir. Wirth to Gov. Johns, Jan. 27, 1954, NARA Ph, RG 79, 79-67-A-1002, box 115.

³⁰⁴ The Florida constitution provided that the president of the state senate become acting governor upon the death, resignation, or incapacitation of the governor.

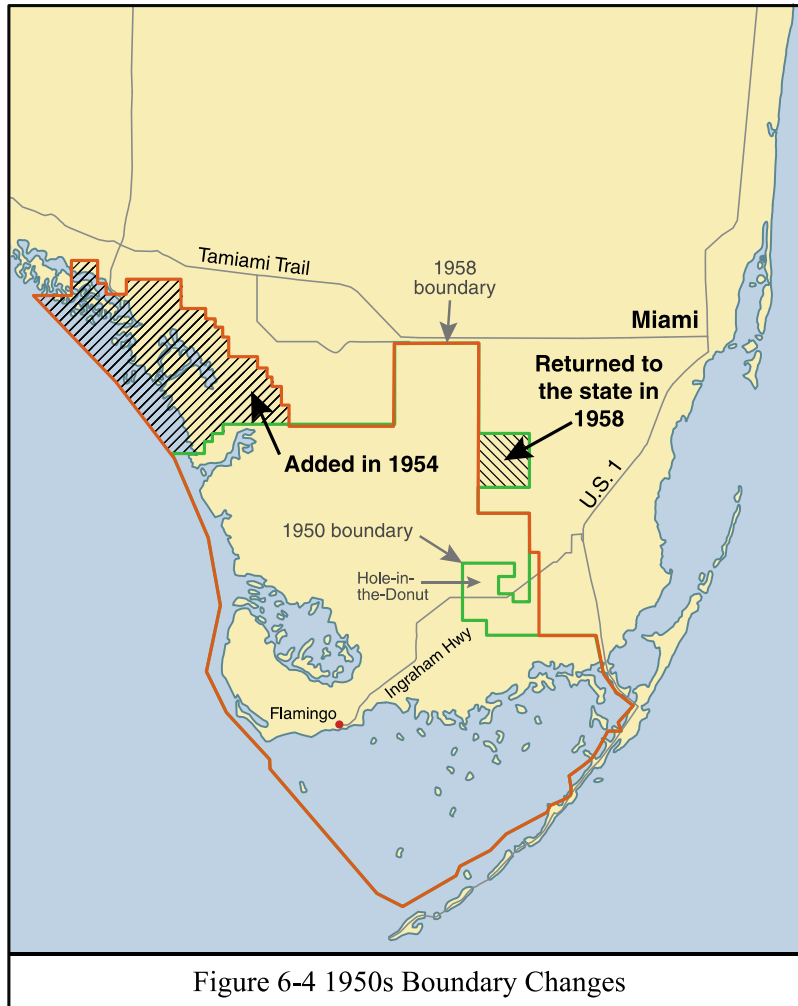


Figure 6-4 1950s Boundary Changes

lease for mangrove harvesting on state land within the authorized park boundary. Unhappy with this turn of events, Senator Holland stepped up his involvement in the federal/state negotiations. Secretary of the Interior Douglas McKay went ahead and on March 12, 1954, issued an order adding 271,000 acres to the park (figure 6–4, 1950s boundary changes). This acreage was in the northwest portion, including some of the Ten Thousand Islands, and brought the park to approximately 1,499,500 acres. The addition included 10,000 acres of the 32,000-acre Collier donation and the Patton tract.³⁰⁵

From 1954 through 1957, discussions continued on boundary issues among the NPS, state officials, and the Florida congressional delegation, chiefly Senator Holland. In May 1954, LeRoy Collins defeated Charley Johns in the Democratic gubernatorial primary; Collins assumed office in January 1955. Collins was much more receptive to the park’s

³⁰⁵ Sen. Holland to Nathan Mayo, Florida Commissioner of Agriculture, Feb. 26, 1954, Gov. McCarty papers, box 15; SOI Order No. 2750, Mar. 12, 1954; “McKay’s Order Enhances Everglades Values,” DOI press release, Mar. 12, 1954, NARA Ph, RG 79, 79–67-A-1002.

expansion, but the remaining four trustees of the IIF continued to balk at ceding more state land. The state was in a position to drive a hard bargain, given that the NPS relied on it to convey important lands, including the Collier donation, for completion of the park. Some issues were resolved at a January 1956 meeting in Washington among Florida Attorney General Richard Erwin; Fred C. Elliott, secretary and engineer to the board of the IIF; Director Wirth; Superintendent Beard; Senator Holland; and Congressman Dante Fascell. Senator Holland supported Dade County interests that wanted to keep the Hole-in-the-Donut out of the park as long as it was used for agriculture, and the NPS acquiesced. The Florida cabinet was mainly interested in minimizing the amount of state land conveyed for the park. In mid-1956, the issue of overnight lodging at Flamingo entered into the picture. As described in Chapter 7, Director Wirth had decided against a lodge at Flamingo. Wirth tried hard to keep the boundary issue and the lodge issue separate, but ultimately that proved impossible.³⁰⁶

A grand bargain was concluded in February 1957 at a Tallahassee meeting that included Director Wirth, Senator Holland, Governor Collins, Florida Secretary of State Gray, Florida Attorney General Erwin, Comptroller Green, and Fred C. Elliot. The terms of the bargain on a new boundary were as follows:

1. Inclusion of the Hole-in-the-Donut within the authorized boundary, with the stipulation that the NPS could never condemn properties as long as they were being used for agriculture.
2. A compromise on the northwest boundary that conveyed all of the Collier lands to the NPS but reconveyed a portion of the Patton tract to the state. This acreage subsequently became part of the Big Cypress National Preserve.
3. Reconveyance of Section 36, Range 57 in the East Everglades to the state
4. A reduction in width from three miles to two miles of the strip of submerged lands along the Gulf Coast to be included in the park.
5. State agreement to convey lands within the new boundary to the NPS.

Governor Collins was strongly in favor of this compromise; the other four trustees were not. Therefore, the board refused to endorse the bargain but agreed only to execute the land exchange if legislation embodying the deal passed the Congress. Writing to Director Wirth after the February meeting, Governor Collins included a postscript expressing his pleasure that Wirth had agreed to the construction of a lodge at Flamingo. Although no one ever admitted it, clearly the NPS's agreement to build the lodge was part of the bargain.³⁰⁷

³⁰⁶ SMR, May 1954; Gov. Collins to Dir. Wirth, May 18, 1955, NARA Ph, RG 79, 79-67-A-1002; Dir. Wirth to Florida AG Richard W. Ervin, Jan. 30, 1956, Gov. Collins papers, box 11; SMR, Jan. 1956.

³⁰⁷ Gov. Collins to Dir. Wirth, Feb. 22, 1957, SLH papers, box 359; Trustees of the IIF Meeting Minutes, Mar. 26, 1957, Gov. Collins papers, box 73..

The terms of the bargain were embodied in Senate Resolution 1790, introduced by Senator Holland. Representatives Fascell and Paul Rogers introduced identical bills in the House. The new boundary in the bill also included small parcels on Key Largo and in Everglades City for NPS facilities. Finally, the legislation authorized the appropriation of \$2 million for land acquisition. This represented the first commitment of federal funds for Everglades land purchases. On July 2, 1958, the legislation was signed into law as P.L. 85–482 (72 Stat. 280) (see Appendix A). Included within the new boundary were 1,337,000 acres (2,089 square miles). On February 25, 1959, an exchange of deeds that fulfilled the bargain took place in Tallahassee. The NPS conveyed 51,000 acres to the state while the state turned over 100,741 acres to the NPS.³⁰⁸

Key Largo

In 1954, the NPS purchased an approximately 14-acre site on Key Largo near mile marker 98 on U.S. 1 to serve as a ranger station and base for boating operations on Florida Bay. The property contained a side-gabled frame house. In 1994, the NPS acquired an adjacent property of 3.7 acres that contained the Reef Comber Motel and various outbuildings. The development of these properties for park use is covered in Chapter 7.³⁰⁹

Acquiring the Hole-in-the-Donut

Throughout the 1950s and 1960s, a new technique known as rock plowing made agriculture in the Hole-in-the-Donut considerably more feasible. Rock plowing involved attaching a scarifying plow blade to the front of a large bulldozer (figure 6–5, bulldozer with scarifying blade for rock plowing, 1955). The plow broke up about 6 to 8 inches of the limestone substrate and mixed it with the thin layer of soil above it. As many as six or seven passes with the plow were required to gain the needed soil depth. The added depth achieved through rock plowing made the growing of winter vegetables possible on land where the soil layer had previously been too thin. With the use of rock plows, the acreage being farmed in the Hole-in-the-Donut rose from about 1,000 in 1947 to about 7,500 in 1970. The expanded scope for growing vegetables caused land values to rise.³¹⁰

³⁰⁸“24-Year Fight Ends; Congress OKs Everglades Boundary Bill,” *Homestead News*, June 26, 1958; “State and Federal Governments Exchange Deeds to Everglades National Park Lands at Ceremony in Tallahassee, Florida,” DOI press release, NARA Ph, RG 79, 79–68-A-636, box 2; NPS, *Annual Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year Ended June 30, 1959* (Washington, DC: GPO, 1959), 357.

³⁰⁹ Mance Buttram and Melissa Memory, “A Cultural Resource Assessment of the Florida Bay Interagency Science Center and Key Largo Ranger Station Site,” Everglades National Park, June 2009, EVER-1570.

³¹⁰ Yuncong Li, “Calcareous Soils in Miami-Dade County,” University of Florida Institute of Food and Agricultural Sciences website, <http://edis.ifas.ufl.edu/tr004>; Ralph Iori, interview by Nancy Russell, Jan. 22, 2009.



Figure 6–5, bulldozer with scarifying blade for rock plowing, 1955

One of the larger operations in the Hole-in-the-Donut was Iori Farms, owned by the Iori brothers, Peter and Tony, who purchased 4,400 acres that they began to rock plow in 1955. The next year, 1956, the Ioris built an H-shaped concrete block structure as a dormitory and mess hall for single field laborers, a separate bath house, a dozen or more small houses (really amounting to shacks) for married laborers, and a shop building with two open-sided bays for tractor and truck parking and maintenance. The Ioris farmed additional acreage farther east on the outskirts of Homestead earlier in the year, planting the Hole-in-the-Donut acreage only in November or December when water levels had declined. The dormitory and houses were thus used year round, with workers bussed to the fields near Homestead until the Hole-in-the-Donut acreage was planted. The Ioris raised tomatoes and a smaller amount of cucumbers in the Hole-in-the-Donut. A good portion of the Ioris' Hole-in-the-Donut acreage was too wet for agriculture and was never rock plowed. In the early years, the Ioris employed a few black laborers, but soon the labor force was entirely Hispanic. The Ioris defaulted on their mortgage in the early 1960s, and the property was taken over by the Farmers Home Administration. The NPS was able to add the 4,400 Iori acres to the park through a 1964 Act of Congress that authorized a payment of \$452,000 to the Farmers Home Administration (figure 6–6, Iori Farms complex).³¹¹ As described in Chapter 22, the U.S. Army used 700 acres of the former Iori property as a Nike missile base from 1965 to 1979 under a special use permit.

³¹¹ Iori Bros. Farms to Gov. Collins, Apr. 5, 1955, Gov. Collins papers, box 11; An Act to Authorize the Secretary of Interior to Accept a Transfer of Certain Lands within Everglades National Park, P.L. 88–588, Sept. 12, 1964; “Iori Camp Buildings,” Drawing 60337, NPS TIC; Ralph Iori, interview by Nancy Russell, Jan. 22, 2009.



Figure 6–6, Iori Farms complex

Two parcels within the Hole-in-the-Donut had nonagricultural uses. In 1956, during the administration of Governor LeRoy Collins, the trustees of the IIF conveyed a tract of 230.34 acres to the South Florida Council of the Boy Scouts of America to use as a scout camp.³¹² This acreage retains that use at this writing. In 1961, a firm called Dreamland Estates, Inc., purchased 840 acres in the Hole-in-the-Donut fronting on Ingraham Highway and began selling lots. The 1–1/4-acre lots started at \$795, with \$10 down and financing at 6 percent. The lots were marketed to African American residents of the Miami area; most of whom probably did not know that they were buying marsh land that was typically under water in the rainy season (figure 6–7, Dreamland Estates advertisement, *Miami Times*, Nov. 13, 1961). NPS officials were particularly troubled by this prospect of multiple owners of small tracts within the area they hoped to acquire.³¹³

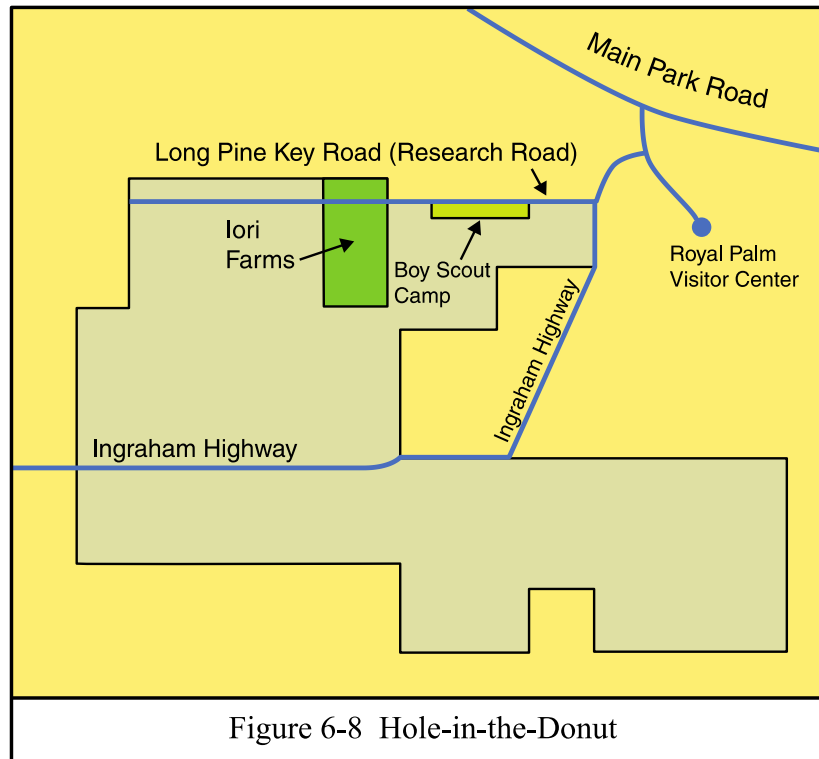
³¹² IIF Deed No. 21134, Feb. 10, 1956. Since the mid-1990s, the South Florida Collections Management Center has had among its holdings a plaque commemorating the donation of the land for the Boy Scout camp. The plaque reads in part: “Camp Everglades/Deeded in 1957 to the South Florida Council of the Boy Scouts of America by members of the Rotary Club of Miami/Acquired by W. Cecil Watson.” Several attempts to get information from the Rotary Club of Miami proved unsuccessful so the role of the club in securing the conveyance from the state remains a mystery.

³¹³ “Glades Homesites Rile Park Official,” *Miami Herald*, undated [1962] article, EVER 42054; Advertisement for Dreamland Estates in *Miami Times* of Nov. 11, 1961, <http://ufdc.ufl.edu/UF00028321/00291/10j>.

Figure 6–7, Dreamland Estates advertisement, *Miami Times*, Nov. 13, 1961

The \$2 million authorized in the 1958 act proved not nearly adequate to purchase the remaining private lands in the northwest extension and the 22,000 acres in the Hole-in-the-Donut. Because Congress made no additional appropriations for acquiring land in the northwest extension in the 1960s, substantial acreage remained to be purchased in that area. To provide more funding and allow for condemnation of agricultural land, if necessary, the Florida congressional delegation engineered the passage of Public Law 91–428 in 1970 (see Appendix A). By this point, NPS officials were convinced that the use of pesticides and herbicides in the Hole-in-the-Donut was harming park wildlife and environments. The new legislation authorized an additional \$20 million for land acquisition, and Congress appropriated \$10 million in fiscal year 1973. By January 1, 1974, the NPS had purchased all but 44 acres in the Hole-in-the-Donut. All of the agricultural land was purchased through negotiations; condemnation was necessary only for some smaller parcels, including a number of the lots in the Dreamland Estates subdivision. Among the larger parcels were the Weisenberg tract, 5,300 acres purchased for \$2.4 million, the Rothenberg tract, 800 acres bought for \$320,000, and the Marlin tract, 525 acres bought for \$210,000. The government permitted some of the sellers to continue leasing their lands for agricultural production through June 1975. At that point, the NPS expected to start restoring the lands in the Hole-in-the-Donut. The new appropriations also allowed the service to complete acquisition in the northwest extension (figure 6–8, Hole-in-the-Donut lands).³¹⁴

³¹⁴ “Government Buys Large Tracts in Everglades Park,” *Miami Herald*, Sept. 7, 1972; NPS Dir. to Congressman Dante B. Fascell, July 20, 1973, NARA II, RG 79, NPS CCF, box 2724.



As the June 1975 deadline approached, the parties farming in the Hole-in-the-Donut began to demand an extension. These were individuals and firms that were allowed to continue their leases for a few years after the land owners had sold out to the government. The South Florida Tomato and Vegetable Growers, Inc. led the effort to keep farming going, arguing that the 1970 law had somehow been “railroaded” through Congress. Further, the organization claimed that farming in the Hole-in-the-Donut added \$25 million to the local economy and provided seasonal employment for 3,000 migrant workers. The growers persuaded the Florida Cabinet to petition the Department of the Interior for an extension of farming. They also retained EcoImpact, Inc., to study the ecological impact of farming and make recommendations. The resulting 284-page report concluded that farming in the Hole-in-the-Donut had “minimal” effect on wildlife. The cover of the report featured a highly imaginative scene of a black tomato picker with a stream and deer in the background (figure 6–9, *The Impact of Evicting Farmers from the Hole-in-the-Donut*). *Miami Herald* columnist John Pennekamp commented, “I never have encountered a similar scene anywhere in the Everglades.” Everglades National Park managers believed the report from EcoImpact was full of errors and held to its position that agriculture in the Hole-in-the-Donut was incompatible with the park’s purposes. A group called Organized Migrants in Community Action (OMICRA) led 150 protesters in a demonstration along the main park road near the main visitor center (Figure 6–10, protesting to keep farming in Hole-in-the-Donut). The protests were peaceful although park rangers apparently anticipated a potential for violence and held drills in full riot

gear. Scattered protests continued near the park entrance and in Homestead throughout the summer of 1975. Nonetheless, the properties were already owned by the NPS, and the protests eventually died away.³¹⁵

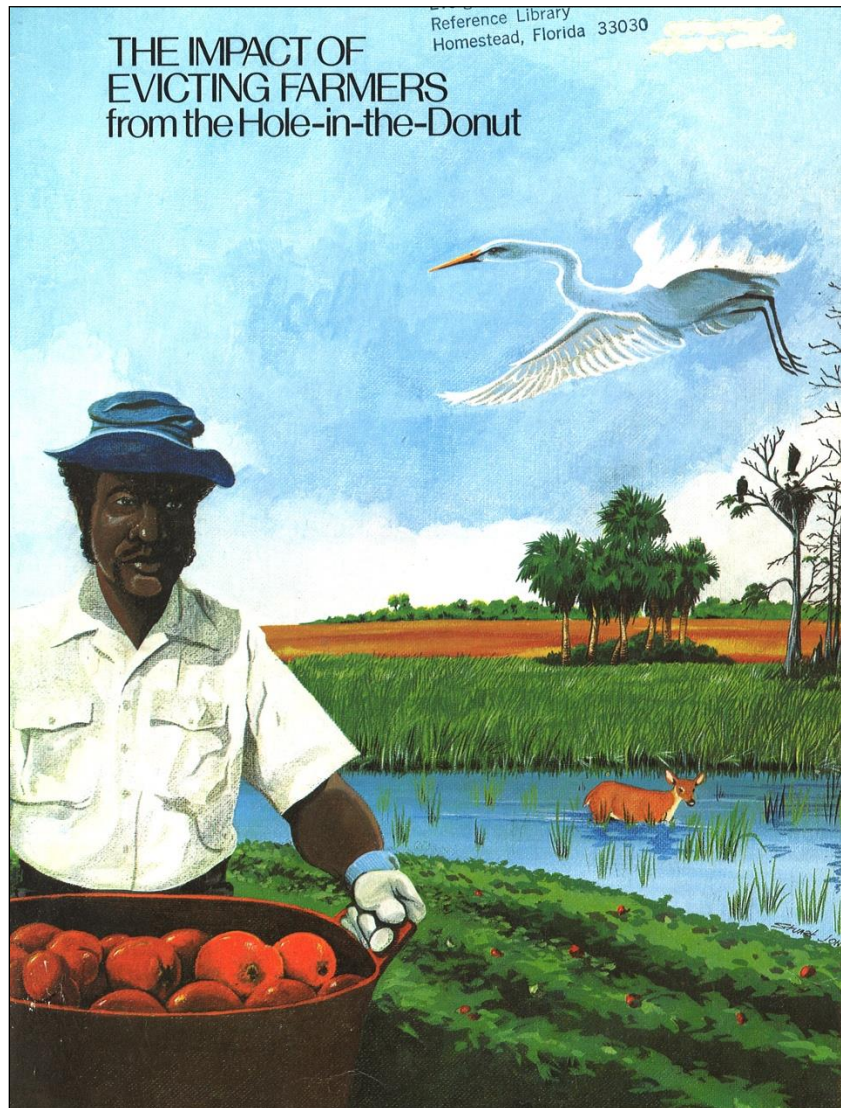


Figure 6-9, *The Impact of Evicting Farmers from the Hole-in-the-Donut*

³¹⁵ John Pennekamp, "A Pretty Pitch for Your Land," *Miami Herald*, May 20, 1975; Dr. Bill Robertson, Historical Comments: Ecoimpact Donut Report, June 9, 1975, EVER 55853, box 62; "150 Farmhands Protest End of Park Harvests," *Miami Herald*, June [illegible], 1975, EVER 42054; "Migrants to Stage Protest at Everglades Farm Land," *Naples Daily News*, Aug. 28, 1975.



Figure 6–10, protesting to keep farming in Hole-in-the-Donut

The East Everglades Addition

The 1958 federal law was meant to establish the “final” boundary of Everglades National Park. As park managers gained a clearer understanding of the hydrology of South Florida, they began to realize that this boundary did not contain all the land necessary to protect the park’s water supply and resources. The area known as the East Everglades was of particular concern. Lying between the eastern boundary of the park as established in 1958 and the east coast perimeter levee, the East Everglades contained a portion of the headwaters of the Shark River Slough, the surface water source for Taylor Slough, and important wildlife habitat. Beginning in the mid-1970s, more and more residential and agricultural development began to occur in the East Everglades. The NPS, the state, and outside groups worked together to pass the Everglades National Park Protection and Expansion Act of 1989. The act’s legislative history, including the critical role of Superintendent Mike Finley, is presented in Chapter 9.³¹⁶

The 1989 act provided for the addition of approximately 107,600 acres to the park; when surveys had been completed, the figure increased to 109,600 acres (figure 6–11, East Everglades lands). The state committed to donating 35,000 acres of land it currently owned. The remaining acreage was privately owned, and there were many small tracts that had been sold sight-unseen as residential lots. The act provided that acquisition costs,

³¹⁶ Everglades National Park Protection and Expansion Act of 1989 (P.L. 101–229 103 Stat. 1946), Dec. 13, 1989; Kathleen Shea Abrams, et al., “The East Everglades Planning Study,” in *Collaborative Planning for Wetlands and Wildlife: Issues and Examples*, ed. Douglas R. Porter and David A. Salvesen (Washington, DC: Island Press, 1995), 226, 232–34.

estimated at 35 to 40 million dollars, would be split 80 percent/20 percent between the federal and state governments. The federal government ended up with about 9,000 tracts as its responsibility. Acquisition was handled by the NPS Land Acquisition Field Office in Naples, Florida, which had been previously established to acquire lands for Big Cypress National Preserve. Appropriations came more slowly than anticipated, driving up the final cost. The first major appropriation of \$7.5 million came in fiscal year 1991. Prices for many properties were negotiated, but some 2,700 condemnation actions were necessary. In the early 1990s, park rangers assisted with site inspections and contacting land owners. The park also worked closely with the Naples office in setting priorities for acquisition. On October 1, 1991, the state turned over 35,000 acres owned by it or its agencies, including Chekika State Park (640 acres) and the section and one-half (960 acres) that it had been administering as a wildlife and environmental area. Through fiscal year 2001, \$72 million had been expended and less than 8,000 acres remained to be acquired. As of this writing, only a handful of properties remain to be acquired.³¹⁷

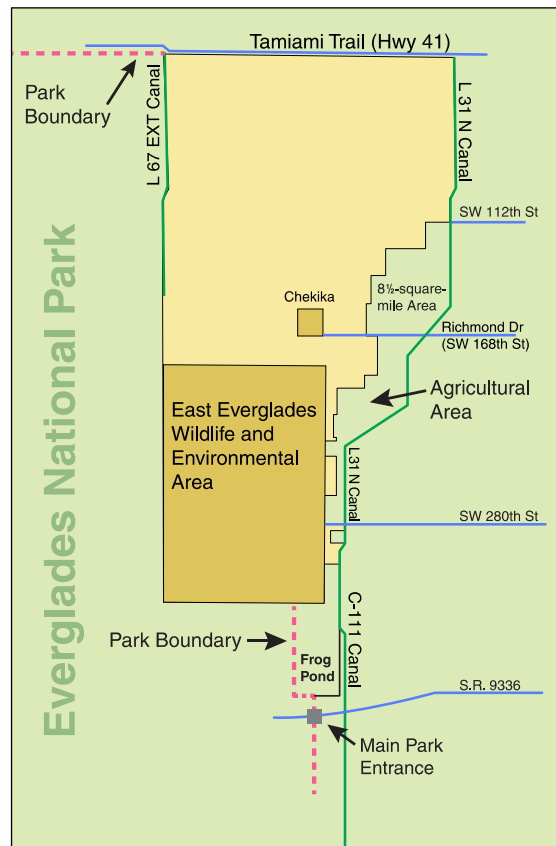


Figure 6-11, East Everglades lands

³¹⁷ "Congress Approves Bill to Expand Everglades Park in Dade County," *Miami Herald*, Nov. 23, 1989; SAR, 1990, 1991, 1993, 2005; Brian Coleman, NPS Naples Land Acquisition Field Office, personal communication, Mar. 21, 2012; Richard Ring, interview by author, July 18, 2012; Elaine Hall, interview by author, June 28, 2012.

Businesses and Camps in the East Everglades Addition

Four businesses offering airboat tours and the William Osceola camp existed on the south side of the Tamiami Trail in the East Everglades expansion area. One business, Coopertown, was established in 1945, and it featured airboat tours and a restaurant. The other three were Everglades Safari Park (airboat tours and a restaurant), Gator Park (wildlife shows and airboat tours), and Frog City (airboat tours). Together it was estimated that the airboat operators served about 300,000 visitors annually. The operators of Frog City sold their property and that business ended. The 1989 act authorized, but did not require, the NPS to extend concession contracts to the remaining three airboat operators. Ideally, the service would have preferred to buy out the operators and put an end to commercial airboating. It was clear, however, that the congressional sponsors of the act had intended that the operators remain, and there was considerable local support for them. In 2005, the park moved to prepare an environmental assessment for the issuance of short-term concession contracts.³¹⁸

The future of private and commercial airboating in the East Everglades was addressed in the development of the park's general management plan (GMP). The preferred alternative in the draft GMP released for comment in spring 2013 called for the NPS to acquire all existing commercial airboat operations. The NPS would then negotiate concession contracts with four or fewer operators. In negotiating contracts, the NPS would strive to consolidate the number of commercial airboat facilities, limit activities to those appropriate in a national park, ensure that tours met NPS standards for interpretation, and confine airboat operations to designated trails in the park.³¹⁹

A parcel in the East Everglades acquired by the park in 1992 contained a settlement of Native Americans on the Tamiami Trail. The settlement is known as the William McKinley Osceola Camp or simply the Osceola Camp. As of 1992, the camp's occupants were not affiliated with either of the two recognized tribes in Florida. The Osceolas had no legal title to the land, which they have occupied since at least 1963, and likely since shortly after the opening of the Tamiami Trail in 1928. In order to regularize the relationship, the NPS moved to issue a special use permit to the Osceolas. A permit was issued in August 2008, with the understanding that congressional legislation would be sought to allow permanent occupation of the camp. A new five-year permit was issued in summer 2013. Sometime after 2008, most, if not all, of the residents of the Osceola camp affiliated with the Miccosukee Tribe of Indians, and they no longer desired legislation.

³¹⁸ Brien Culhane to Supt. Finnerty, Nov. 3, 2000, EVER 22965; Temporary Airboat Concession Contracts Environmental Assessment, Public Scoping Notice, Oct. 2005, <http://parkplanning.nps.gov/document.cfm?parkID=374&projectID=13735&documentID=12773>.

³¹⁹ NPS, *Everglades National Park Draft General Management Plan/East Everglades Wilderness Study/Environmental Impact Statement* (Homestead, FL: NPS, Feb. 2013), 71 [hereinafter cited as *Draft GMP*].

The occupants have also raised the areas surrounding the buildings in the camp in anticipation of higher water levels associated with the raising of a section of the Tamiami Trail.³²⁰

Florida Power & Light Corridor

Included in the East Everglades expansion area was a corridor 7.4 miles long and 330 feet wide belonging to Florida Power & Light Company (FP&L), totaling 320 acres. FP&L purchased the land in the late 1960s and early 1970s as part of a continuous corridor from its power plant at Turkey Point on Biscayne Bay to substations farther north. The company wanted to be able to build new transmission lines in case it added capacity at Turkey Point in the future, a likely event given South Florida's rapid population growth. Following the 1989 legislation, the NPS hoped to buy the land in the corridor. The FP&L corridor became a much higher priority as changes under the Modified Water Deliveries project came closer to realization. These changes involve inundating the corridor during a portion of the year. Building transmission lines requires constructing concrete pads for foundations and an access road for line maintenance. These changes would impede surface water flow and potentially impact the nesting areas of wood storks and other birds. The Corps of Engineers, acting on behalf of the NPS, for a number of years attempted to negotiate a purchase of the corridor, offering \$109,300 for the parcel in 1996, but the company declined the offer.³²¹

After studies running from 2006 to 2008, the NPS, the Corps, FP&L, and the South Florida Water Management District identified an alternate corridor—a 260-acre strip of NPS-owned land on the eastern edge of the East Everglades expansion area, about three miles east of the strip owned by FP&L. This alternative strip is known as the West Preferred Corridor. Although this corridor is within the park boundary, it was generally believed that locating transmission lines there would have fewer negative impacts on water flow and natural resource values than placing it on the original FP&L corridor (known as the West Secondary Corridor). In July 2008, the NPS and FP&L executed an agreement to do a land exchange in the expansion area, subject to congressional authorization of the exchange. At the same time, FP&L granted an easement over a portion of its corridor that allowed the construction of a bridge elevating a one-mile section of the Tamiami Trail to go forward (see Chapter 28). In the Omnibus Public Land Management Act of 2009, Congress authorized but did not require the secretary of the

³²⁰ Dan Kimball, EVER Supt., to Fred Gaske, Florida State Historic Preservation Officer, n.d. [ca. July 2008], Special Use Permit for Osceola Camp, expiring Aug. 15, 2013, EVER 22965; Dan Kimball, personal communication, Oct. 30, 2013.

³²¹ Dan Kimball, interview by author, Jan. 18, 2012; ENP, "Scoping Newsletter, Acquisition of Florida Power and Light Lands in the East Everglades Expansion Area Environmental Impact Statement," June 2011, <http://parkplanning.nps.gov/document.cfm?parkID=374&projectID=37220&documentID=41410>; "Environmentalists Want FPL Out of Everglades National Park," *Miami Herald*, June 27, 2011.

interior to enter into the land exchange. Any such exchange was to be the subject of an environmental analysis prior to action by the secretary. The NPS viewed the 2009 legislation as superseding the 2008 agreement it had made with FP&L.³²²

As knowledge of the proposed land swap spread, some scientists and several environmental groups raised serious concerns. Building on the West Preferred Corridor would lessen the impact on surface water flow, but concerns remained over the visual impact of a seven-mile string of 140-foot towers and their effects on nesting wading birds. Many people inside and outside the NPS were concerned about the precedent that would be set if FP&L were allowed to build a transmission line anywhere within the park's boundary. In compliance with the provisions of the National Environmental Protection Act, the NPS in May 2011 began to prepare an environmental impact statement to assess the effects of various options, including NPS purchase of the FP&L-owned West Secondary Corridor or a land exchange. At a public meeting in June 2011, the National Parks Conservation Association (NPCA) presented 8,000 letters opposing the land swap. The NPCA and local chapters of the Sierra Club and the National Audubon Society strongly urged the NPS to purchase the West Secondary Corridor, by condemnation if the company declined to sell. NPCA representative Dawn Shirreffs said, "The folks who care about national parks think it's completely inappropriate to give a utility national park land for a power line corridor."³²³

As work on the environmental impact statement went forward, in-depth discussions were conducted in 2012 among representatives from the NPS, FP&L, Miami-Dade County, the state, and the NPCA. The NPS commissioned a study from the Louis Berger Group, Inc., to explore additional alternate corridors east of the park boundary. In December 2012, the NPCA announced that the parties had agreed upon such an alternate corridor, which came to be known as the West Consensus Corridor. FP&L subsequently applied to the Florida Department of Environmental Protection for approval to build on any of the three corridors: the West Consensus Corridor, the West Preferred Corridor, and the West Secondary Corridor. The company subsequently dropped the West Secondary Corridor from its application. The final decision lay with Florida's governor and cabinet, sitting as the Florida Power Plant Siting Board.³²⁴ In January 2014, with FP&L's application pending, the NPS released a draft environmental impact statement with several

³²² "Scoping Newsletter, FP&L"; Section 7107, Omnibus Public Land Management Act of 2009 (P.L. 111-11), Mar. 30, 2009.

³²³ "Scoping Newsletter, FP&L"; NPS, *Draft Acquisition of Florida Power & Light Company Land in the East Everglades Expansion Area—Second Internal Review* (Homestead, FL: NPS, Aug. 2013), 6; Dan Kimball, interview by author, Jan. 18, 2012; "Everglades Land Swap May Be Key to FPL Plans to Expand in West Miami-Dade," *Miami Herald*, July 17, 2009; "Environmentalists Want FPL Out," *Miami Herald*, June 27, 2011."

³²⁴ In 2003, the Florida cabinet was reduced to three members: the attorney general, chief financial officer, and the commissioner of agriculture. State of Florida website, <http://www.myflorida.com/myflorida/cabinet/structurehistory.html>.

alternatives for public comment. The service withheld its decision on a preferred alternative until after it had analyzed comments.³²⁵

On May 13, 2014, the Florida Power Plant Siting Board certified the West Consensus Corridor as the preferred choice for the transmission line. It also gave approval to FP&L to construct two nuclear-powered generating plants (nos. 6 and 7) at its Turkey Point facility on Biscayne Bay. The board approved the West Preferred Corridor as a back-up in case “an adequate right-of-way within the West Consensus Corridor . . . cannot be secured in a timely manner and at a reasonable cost.” The assumption is that building on the West Consensus Corridor will be less expensive than building on the back-up corridor within the park. Much of the land in the West Consensus Corridor has already been developed and is owned by the South Florida Water Management District (SFWMD) or limestone-mining companies. The SFWMD and the mining companies are eager to keep the transmission line out of the park. The action of the siting board provides hope that the transmission line can be kept out of the park, although uncertainties remain: the new Turkey Point nuclear plants await approval by the Nuclear Regulatory Commission; it is unclear how quickly FP&L can acquire the land along the West Consensus Corridor, and construction of towers on any wetlands within the corridor requires approval from the Corps of Engineers. Assuming that the company is successful with the West Consensus Corridor, it is expected that it will then deed its 320 acres within the park to the NPS.

Tarpon Basin

In 2002, the park became aware that a parcel of about 592 acres on the southern portion of Key Largo might be available for purchase. The parcel consisted mostly of coastal mangrove forest and included 10 acres of hardwood hammock and a 900-foot frontage on U.S. 1. The purchase was attractive to the NPS because most of the hardwood hammock on Key Largo had been lost to development, the parcel would provide an additional point of access to Florida Bay for park staff, and the frontage on U.S. 1 had potential as a visitor contact point. Because the property was outside of, but adjacent to, the park’s authorized boundary, congressional action was required to expand the boundary and allow the acquisition. Superintendent Maureen Finnerty contacted The Nature Conservancy, which purchased the property for \$370,000 in 2003, after being assured that the NPS would seek the required congressional approval. The conservancy agreed to

³²⁵ Fred Herling, personal communication, Sept. 24, 2013; NPCA, “National Parks Group Submits Win-Win Alternative to Protect Everglades National Park from Transmission Lines,” Dec. 13, 2012, <http://www.npca.org/news/media-center/press-releases/2012/national-parks-group-submits.html>; NPS, “National Park Seeks Comment on Draft Environmental Impact,” Feb. 17, 2014, <http://www.nps.gov/ever/parknews/national-park-seeks-public-comment-on-draft-environmental-impact.htm>; NPCA, “Updated Florida Power and Light Proposal to Keep Transmission Lines Out of Everglades National Park,” May 13, 2014, <http://www.npca.org/news/media-center/press-releases/2014/updated-florida-power-and.html>.

hold the land in the interim. Congress, in the Omnibus Public Land Management Act of 2009 (see Appendix A), adjusted the park boundary to include the Tarpon Basin property and authorized the NPS to acquire the tract by donation or through appropriated funds. To allay local concerns, the act gave the service authority to continue to permit owners of sailing vessels to shelter them in the basin (traditionally used as a “hurricane hole”) during storms. On May 25, 2010, The Nature Conservancy conveyed the property to the NPS by donation.



**Wilderness on the Edge:
A History of Everglades National Park**

*Chapter 7:
Developing the Park*

Chapter 7: Developing the Park

Many ideas for the development of the park were proposed long before the park was established and the NPS began a formal planning process. During the 1930s and 1940s, some Florida proponents of the park foresaw resort hotels, parkway roads, and even golf courses as part of the program. In 1933, Marjory Stoneman Douglas confidently wrote that: “Hotels maintained by the park service will be situated on the loveliest of the outer beaches, along the Keys, or at Cape Sable.” Five years later, G. Orren Palmer, head of the ENPC, pointed to resort-type development to convince Florida citizens of the economic benefits of a park. In a radio talk, he referred to “roads, bridges, canals, five large hotels, tourist camps, fishing camps,” and more that would sprout up not long after a park was established. The development of recreational facilities within the park had long been a goal of many of the Florida business owners who saw the park mainly as a source of tourist dollars. It was in large part this sort of boosterism, along with the proposal for a shoreline scenic highway persistently touted by the ENPA, that had motivated leading conservationists to press for a wilderness guarantee in the park’s 1934 enabling act. This chapter discusses how “wilderness” was a nebulous concept in the 1930s and the absence of NPS policies for managing wilderness. In fact, the NPS published a map shortly after 1934 showing a scenic road traversing the entire shoreline of the park—the same road that Ernest Coe and the ENPA had long supported (figure 7–1, NPS recreational map of Florida, ca. 1935). Although this map did not commit the agency to building the road, it suggested NPS support for a continuous road through the mangrove forest along the coast.³²⁶

The NPS, however, was careful to remind all concerned that no serious planning for park development could take place prior to establishment. The service also promised that thorough investigations of natural resource values and wildlife needs would take place as part of the park planning process. Because Everglades National Park was conceptualized as above all a wilderness and biological park, the first development program for the park was critical—all future development was likely to remain within the footprint of the original development.³²⁷ As the NPS began its planning process in the late 1940s, three key issues emerged. The first was what kind of development to allow along the relatively high ground stretching from Flamingo to Northwest Cape Sable. This was the only sizeable area within the park that lent itself to significant recreational development; it remained unflooded except during hurricanes and it had the sand beaches and Gulf views

³²⁶Sam Houston and Marjory Stoneman Douglas, “Florida Parks,” *Florida Sunrise*, Jan. 2, 1933; G. O. Palmer to Gov. Cone, Apr. 28, 1938, “Recreational Map of Florida” (Washington, DC: DOI, n.d. [1935]), Gov. Cone papers, box 30).

³²⁷ Later during the Mission 66 period, the declared policy of the NPS would be that wilderness or primitive areas would be preserved largely by directing the bulk of visitors to strictly limited areas within in parks. See Richard W. Sellars, *Preserving Nature in the National Parks: A History* (New Haven: Yale University Press, 1997), 181.

that visitors favored. A second question was whether to continue to rely on an improved version of the Ingraham Highway as the main means of automobile access or to cut new roads into the park. A third issue was the appropriate location for park headquarters. NPS managers aimed to limit development to 10 percent or less of the park's land area. They believed that many areas of the park would always remain accessible by boat only. The principal decision concerning boating was the number and location of marinas within the park where boats might be rented or visitors could launch their own. Finally, the NPS faced considerable pressure from Florida politicians and businesspeople to develop the park quickly, which threatened to shorten the normal planning process. As mentioned in Chapter 5, premature park development also risked making land acquisition more expensive.

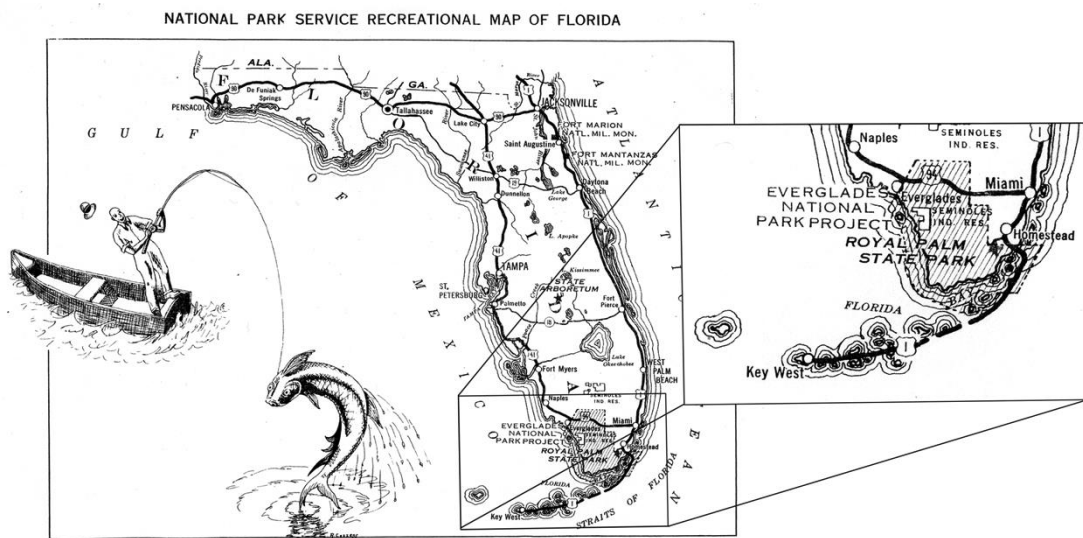


Figure 7-1, NPS recreational map of Florida, ca. 1935

Preliminary NPS Planning

Already in 1946, Ray Vinten, Dan Beard, and Regional Director Thomas Allen were informally discussing what sort of park development would be appropriate. The Washington office cautioned Allen to be very circumspect about what was said publicly. Washington advised that the best response to queries from the ENPC and others would be to point to what had been done in other parks.³²⁸ After the park was established in June 1947, work began on the first version of a park master plan. Secretary of the Interior Julius Krug took a strong interest and pushed for extensive recreational development. A few days after the park dedication in December 1947, Krug met with John Pennekamp and other ENPC members, the mayor of Miami, newspaper publishers, and

³²⁸ RDR1 Allen to Daniel Beard, May 13, 1946, NARA Ph, RG 79, 79-58A-360, box 8; Acting Dir. Hilary Tolson to RDR1 Allen, June 6, 1946, NARA II, RG 79, NPS CCF, box 901.

Superintendent Beard in Miami. The secretary was largely in agreement with local opinion leaders on the need for rapid development. Spurred by the secretary's interest, the NPS held a meeting in Washington, DC on December 30. Key participants were Associate Director Demaray, Regional Director Allen, and Chief of Development Thomas C. Vint. The group decided to have a preliminary version of a master plan ready to present to the secretary by April 1948. The master plan was to be based on the following assumptions:

1. The main park road would largely follow the route of the Ingraham Highway, but it would swing north to avoid going through the Hole-in-the-Donut.
2. Extensive visitor-use development between Middle Cape Sable and East Cape Sable would include lodge and cabin accommodations for 1,000 visitors and camping and picnicking facilities that could handle another 1,000.
3. Coot Bay would be developed as a marina and NPS patrol base.
4. Pine Island would be a temporary location for employee housing while permanent sites for park headquarters, housing, and maintenance would be studied.
5. Everglades City would be a jumping off point for boat visitors, but no road would be built into the park from there. Initial visitor amenities would be left to private enterprise.
6. A concessioner would be sought to operate houseboats for overnight rental at selected spots.³²⁹

These ideas were embodied in an early version of the park's master plan produced in March 1948. The general development plan for the park at this juncture called for overnight lodging and a boat concession at Cape Sable and a second boat concession at Coot Bay. A museum, the main utility area, park administrative offices, and park housing were slated for a location just inside the park boundary, west of Homestead. The plan located ranger stations at Lostmans River, Shark River, East River, and Tavernier in the keys. The master plan drawings for the proposed Cape Sable development are strikingly modernist, with asymmetrical massing, flat roofs, curtain walls of glass, and canopies supported by concrete pylons (figure 7-2, proposed Cape Sable development). Superintendent Beard branded the style "Miami Beach Modern." Beard was prescient in his terminology. Architectural historians have embraced the term Miami Modern to describe the Miami Beach hotels of the late 1940s through the 1960s. Miami Modern has been called a "populist fantasy version of modernism." The style is similar to International Style modernism in its emphasis on modern materials (concrete, steel, and glass), large flat wall expanses, window walls, and the use of concrete pylons, but is somewhat more playful, especially in the use of color. Miami Modern is most closely associated with works, such as Morris Lapidus's 1954 Fontainebleau Hotel, but the trend was well underway in 1948.

³²⁹ Daniel Beard to Dir. Drury, Dec. 11, 1947, NARA II, RG 79, NPS Dir. Recs., Drury, box 7; Dir. Drury to SOI Krug, Jan. 2, 1948, NARA II, RG 79, NPS CCF, box 910; Ralph W. Emerson, Regional LA, to RDR1 Allen, Jan. 30, 1948, NARA Ph, RG 79, 79-58A-360, box 8.

NPS designers would have been aware of two new Miami Beach hotels—Henry Hohausser’s Sherry Frontenac (1946) and Roy France’s Saxony (1948).³³⁰

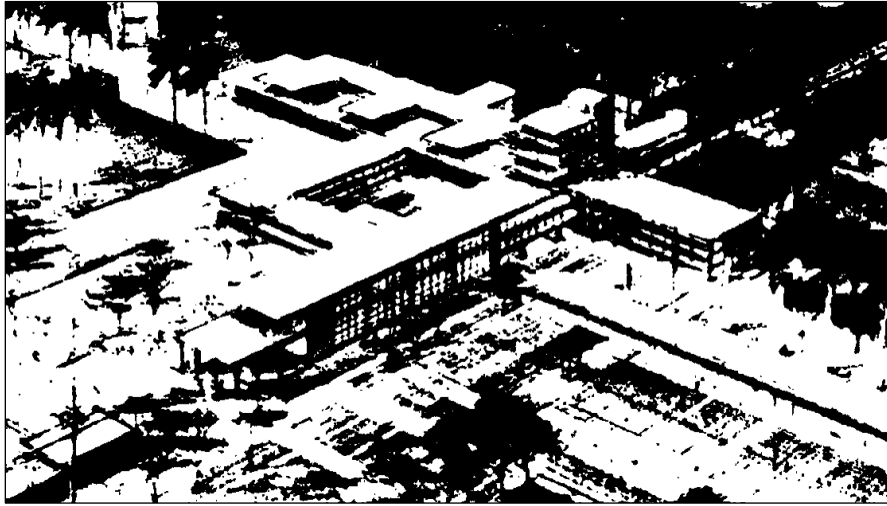


Figure 7–2, proposed Cape Sable development

The concepts from the first master plan circulated within the NPS and were shared with leading conservationists. Not surprisingly, service biologists and some conservationists believed that this was too much development for a wilderness park. NPS Chief Biologist Victor Calahane found 2,000 lodgers and campers at Cape Sable excessive. Devereux Butcher, executive secretary of the National Parks Association, and prominent conservationist Augustus Houghton wrote the DOI urging that the development plans be scaled back. Thomas Vint also began to have second thoughts. As described in Chapter 6, the NPS in 1948 had not yet come to a final decision on the future of the fishing village at Flamingo. Once the service decided in early 1949 that Flamingo had to go, concentrating visitor use facilities at Flamingo, an area that already had been disturbed, became a more appealing option than placing them at the Middle Cape. The pushback from conservationists and biologists was also a major factor leading the NPS to rethink its plans for the park. It is entirely possible that Director Drury showed the preliminary plans to conservationists in hopes of getting ammunition that he could then use against those who were promoting extensive tourist accommodations in the park. NPS budgets in this period were meager, and development in the park was almost certain to proceed slowly in any event. While waiting for appropriations, NPS officials in the early 1950s continued to refine a master plan.³³¹

³³⁰ “General Development Plan,” NP-EVE-2000-C, March 11, 1948; “Perspective, Cape Sable,” NP-EVE-2011, Feb. 24, 1948; Supt. Beard to RDR1, Mar. 29, 1949; Eric P. Nash and Randall C. Robinson Jr., *MiMo: Miami Modern Revealed* (San Francisco: Chronicle Books, 2004), 53–56.

³³¹ Beard to file, Mar. 18, 1948. EVER 22965; Victor Calahane to Dir., Apr. 7, 1948, NARA II, RG 79, NPS CCF, box 910; A. S. Houghton to SOI Krug, Apr. 16, 1948, EVER 22965, series vi, box 2; Devereux Butcher, Exec. Sec., NPA, to Dir. Drury, Feb. 13, 1948, NARA II, RG 79, NPS Dir. Recs., Drury, box 15; Dr. Lunsford to Gov. Caldwell, Sept. 6, 1946, Gov. Caldwell papers, box 25; Daniel Beard to RDR1, Apr. 23, 1949, EVER 22965; Daniel Beard to Lloyd House, House Fish Co., Feb. 8, 1949. NARA Ph, RG 79, 79–58A-360, box 8.

Beginning in the winter of 1948/49, visitors, Florida politicians, and the press began to complain that the new park offered few amenities for visitors. In summer 1949, *National Parks Magazine* pointed out that the only public latrine in the park was “a disgraceful wreck of a privy perched over a roadside drainage canal” at Coot Bay (figure 7–3, Coot Bay comfort station, *National Parks Magazine* vol. 23, no. 98 [July—Sept. 1949], p. 29). The NPS resorted to a number of temporary measures until more permanent development was in place. By the winter of 1949/50, the bathrooms at the Royal Palm Lodge had been rehabilitated and opened to the public. By the following winter, a concessioner, National Park Concessions, Inc., was operating a snack bar and gas station at Coot Bay. Ranger stations were established at Coot Bay and in the Royal Palm Lodge. On the Gulf Coast, a houseboat was used as a temporary ranger station until January 1950, when a patrol cabin was completed on Lostmans River. By April 1952, the old Coleman Irwin house at Flamingo and a former restaurant and service station (purchased from John and Julia Szady) at 40-mile bend on the Tamiami Trail were in use as ranger stations.³³²



Figure 7–3, Coot Bay comfort station, *National Parks Magazine* vol. 23, no. 98 [July—Sept. 1949], p. 29

³³² Anthony F. Merrill, “Exhibiting the Everglades,” *National Parks Magazine* vol. 23, no. 98 (July–Sept. 1949), 23; SMR, Jan. 1949, Jan. 1950, Jan. and Apr. 1952. The 1940 census showed John and Julia Szady living in Florida City with their three daughters. John gave his occupation as oil field worker.

The first permanent visitor use structure at the park was an interpretive center/ranger station at Royal Palm Hammock (Paradise Key). In part because NPS managers thought it best that “Paradise Key be permitted to return to the primitive with practically all evidence of former human occupation removed,” no consideration was given to retaining and reusing the Royal Palm Lodge and its outbuildings. Management saw the lodge as dilapidated, costly to maintain, and not well located. The NPS had chosen Royal Palm Hammock as a prime wildlife viewing area and had two nature trails laid out by 1949 and 1950 (see Chapter 20). In April 1951, it began construction on a new interpretive center and ranger station about 1,500 feet east of the lodge.³³³ The new facility was ready for use by the winter season. An unornamented structure of poured concrete, the interpretive center was notable as an early example of the NPS’s commitment to modernist architecture, coming four years before the advent of the Mission 66 program (figure 7–4, Royal Palm Ranger Station at completion, 1951).³³⁴



Figure 7–4, Royal Palm Ranger Station at completion, 1951

As constructed, the Royal Palm interpretive center had two buildings—the exhibit space/ranger office and a comfort station—connected by a continuous flat roof that extended out to form a canopy supported by concrete pylons. The exhibit building rose about three feet above the level of this primary roof and had clerestory ribbon windows on all four sides. As one of the NPS’s first modernist structures in the postwar period, the

³³³ The new facility was on the route of Ingraham Highway, so that it would be immediately accessible to visitors. When the new main road was finished, a dead-end spur road to the facility was to be built, and that portion of Ingraham Highway then made into a foot trail.

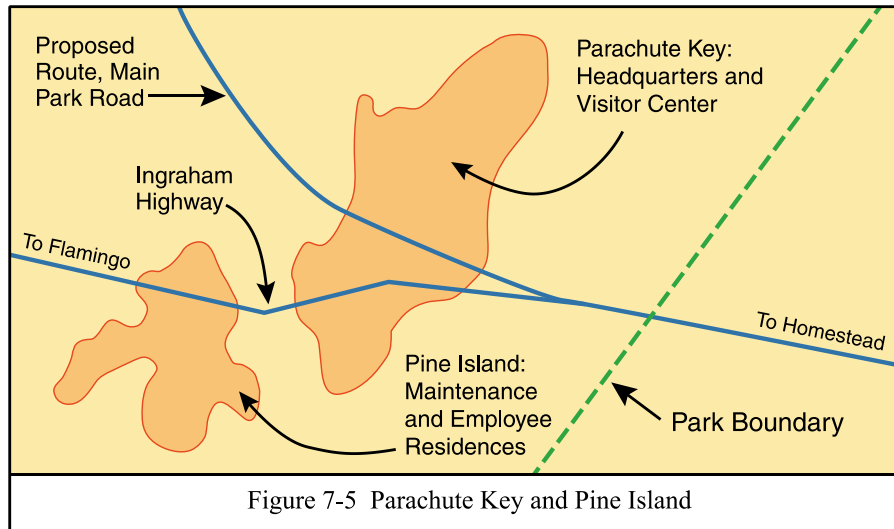
³³⁴ SMR, Dec. 1949, May 1950, Apr. and Dec. 1951; Supt. Beard, Comments on Master Plan, Mar. 23, 1948, NARA II, RG 79, NPS CCF, box 910; Supt. Beard to RDR1, Mar. 17, 1949, EVER 22965, ser. vi, box 2; Supt. Beard to RDR1, July 28, 1952, NARA Ph, RG 79, 79–62-A-305, box 52.

Royal Palm facility drew criticism. Devereux Butcher's 1952 article in *National Parks Magazine* deploring the trend toward contemporary architecture in national parks called it an "incongruity." A travel writer for the *Chicago Tribune* noted that the center looked "somewhat out of place in its jungle setting." The architectural style used for the Royal Palm building, nonetheless, shows that Mission 66 in large part merely reaffirmed what had been NPS practice for several years.³³⁵

As the NPS inaugurated the Royal Palm building, it continued to fine-tune a master plan. Chief of Design Vint made visits to the Everglades in March 1949 and again in March 1952. Frederick Law Olmsted Jr. and William Lyman Phillips visited in late spring 1950. Olmsted told Ray Vinten and NPS Director Drury that he believed Coot Bay was a poor site for visitor services. He thought the main park road should cross Long Pine Key before returning to the route of the Ingraham Highway. Further, he advised running the road within sight of Snake Bight, through Flamingo and past Northwest Cape Sable, to a visitor contact point and marina for tour boats on Oyster Bay. By April 1953, the NPS had confirmed the decision to concentrate visitor services at Flamingo, including marina services that had once been slated to remain at Coot Bay. Both Beard and Vint wanted park headquarters to be on U.S. 1, well to the east of the park's authorized boundary, where it could attract travelers driving from Miami to the keys. Most everyone else wanted headquarters just inside the park's east boundary, on a piece of high ground that Beard had named Parachute Key (figure 7-5, Parachute Key and Pine Island). Tom Vint was again in the park in March 1954, when the final decision to place headquarters on Parachute Key was made. By then, four quarters units and a shop building had been constructed at Pine Island, not far from Parachute Key.³³⁶

³³⁵ Devereux Butcher, "For a Return to Harmony in Park Architecture." *National Parks Magazine* 26/111 (Oct.–Dec. 1952); "Paradise Key Offers Look at Wilderness," *Chicago Tribune*, Apr. 21, 1957. The Paradise Key facility cost \$74,802, including site preparation and utilities; the contractor was J. E. Shaw. Form 10-768, EVER 22965.

³³⁶ C. Ray Vinten to RDR1, Apr. 15, 1950, EVER 22965; SMR, Mar. 1954. Beard later wrote that he named it Parachute Key with the thought that if all the other suggestions for a headquarters location (including his preferred spot on U.S. 1) "were shot down in flames," the NPS could parachute into a fallback location—the key located just inside the park's eastern boundary, which was the site ultimately chosen. Daniel Beard to Editor, ENHA, Mar. 28, 1969, EVER 22965.



Main Park Road

During the late 1940s and early 1950s, a sharp difference of opinion emerged between Vint and Beard on the location of the main park road. Beard adhered to longstanding NPS ideas that motorists should have both easy access to important natural features and pleasing vistas from their autos. He found Ingraham Highway visually uninspiring, deploring its straight lines and sharp turns. Instead, Beard wanted to cut a new, gently curving road that would skirt the northern edge of Long Pine Key and give access to several features, including Mahogany Hammock and a platform offering a view over Shark Slough.³³⁷ After briefly rejoining the north-south segment of Ingraham Highway at Sweet Bay Pond, the new road would follow gentle curves just to the east of the old highway and terminate at Flamingo. Vint, who had overseen the construction of many famous and carefully sited roads in the western parks, disagreed. He argued that retaining the Ingraham Highway would be cheaper and less damaging to natural values than building a new road.³³⁸

Vint in September 1954 persuaded Director Wirth to scrap the plan for a new park road and go back to the idea of improving the Ingraham Highway. This move came in spite of the fact that the Bureau of Public Roads had made surveys of the new route across Long Pine Key the previous winter. Superintendent Beard and Edward S. Zimmer, chief of the

³³⁷ Some thirty years later, C. Ray Vinten said that he had suggested to Beard the idea of routing the park road so as bring visitors to “different stations along the road [to interpret] that great river of grass.” C. Ray Vinten, interview by Boyd Evison, Apr. 6, 1971, St. Augustine Historical Society.

³³⁸ Thomas C. Vint, “Notes on a Trip to Everglades National Park,” Mar. 28, 1949, NARA II, RG 79, NPS CCF, box 904; C. Ray Vinten to RDR1, Apr. 18, 1950, EVER 22965, ser. vi, box 2; Supt. Beard to RDR1, Apr. 9, 1952, NARA Ph, RG 79, 79-58-A-360, box 8; Supt. Beard to RDR1, Mar. 17, 1953, NARA Ph, RG 79, 79-62-A-305, box 28.

newly established NPS Eastern Office of Design and Construction, vociferously objected to this change.³³⁹ In March 1955, the director abandoned the idea of keeping Ingraham Highway. Ultimately, a hybrid plan was adopted, with a wholly new alignment around Long Pine Key but a return to the route of Ingraham Highway from Sweet Bay Pond to the vicinity of Coot Bay. The NPS paved the portions of the old highway incorporated into the new road, made the curve at Nine Mile Pond more gentle, and rerouted most of the road from near Coot Bay to Flamingo. The main park road was constructed in ten separate projects, beginning in May 1955, and was opened to the public in March 1957. Grading, seeding, and signage were completed in the summer of 1958. Traditionally, roads in the Everglades had been built with fill dredged from alongside the road, creating canals. These canals both disrupted the water regime and were dangerous for drivers. For the main road in Everglades National Park, engineers got fill from nine borrow pits within the park. The pits were excavated to a depth of fifteen to twenty feet at sites out of view of the road. To make them seem more natural, the pits were made with jagged rather than smooth edges. They also were kept shallow near their banks to encourage the growth of native vegetation. To help preserve surface water flow, a bridge was built to carry the main road over Taylor Slough and culverts were placed at intervals along the road.³⁴⁰

Over time, the NPS converted portions of the Ingraham Highway to maintenance roads or trails and obliterated other sections. One section of about .75 mile near the main park entrance was removed in 1951 when the service built an access road to the Pine Island residential and maintenance area. Planners incorporated approximately 1,360 feet of the highway into the Anhinga Trail (see Chapter 20). When the main park road was under construction in the mid-1950s, the NPS removed a 3.4-mile section of the highway and the adjacent Homestead Canal running east from Sweet Bay Pond to limit access to the backcountry by poachers. Most of the rest of the old highway running east and northeast to Royal Palm remains and is now the Old Ingraham Highway Trail, with two backcountry campsites (Ernest Coe and Old Ingraham). In 1993, the SFWMD removed 700 feet of the old highway in Taylor Slough to improve surface water flow. The Corps of Engineers completed this job in 1998 by removing another 2,190 feet.³⁴¹

³³⁹ The Eastern Office of Design and Construction (EODC) and its counterpart, the Western Office of Design and Construction were set up in 1954. Architects, landscape architects, and engineers that had formerly worked in the regional offices were pulled into the new units. Landscape architect Edward Zimmer was chosen to head up the EODC in Philadelphia. Thomas Vint remained in the Washington office as chief of design and construction. Ethan Carr, *Mission 66: Modernism and the National Park Dilemma* (Amherst: University of Massachusetts Press, 2007), 63–64.

³⁴⁰ Supt. Beard to RDR1, Mar. 17, 1953, NARA Ph, RG 79, 79–62-A-305, box 28; Dir. Wirth to RDR1, Sept. 23, 1954, Dir. Wirth to Supt. Beard, Mar. 15, 1955, NARA Ph, RG 79, 79–62-A-305, box 43; SMR, Apr. 1957; Bureau of Public Roads, “Final Report, Flamingo Road (Park Road 1),” June 30, 1959, EVER 22965; Park Entrance Road, Snake Bite Section & Coot Bay Spur, Feb. 1950, EVER 2075.

³⁴¹ Buttram, Trebellas, Memory, and Odgen, 61, 65, 69.

Early on, park planners recognized the need to provide dead-end roads and short trails from the main park road to allow visitors to experience Everglades environments in comfort. The service built parking lots and trails, with elevated boardwalks as needed, at:

- Pinelands, to interpret the Atlantic Coastal Ridge and pine uplands, 1958;
- Pa-Hay-Okee (Joree Hammock), with an elevated overlook to interpret sawgrass marsh, 1959;
- Mahogany Hammock, to interpret hardwood hammocks, 1959; and
- West Lake, interpretive exhibits, a comfort station and a trail through mangrove forests, 1965.

By 1963, the NPS considered the park road system “essentially complete.” The total cost of constructing the main park road and the parking areas at Pinelands, Pa-Hay-Okee, and Mahogany Hammock was \$3,722, 369 (figure 7–6, park developed areas).³⁴²



³⁴² NPS, Mission 66 Prospectus, July 15, 1955, ENP CR files; Robert M. Mangan, Dep. Asst. SOI, to Congressman Dante Fascell, June 21, 1963, NARA II, RG 79, NPS AF, box 420; Asst. Supt. George Fry to John Balfe, Managing Editor, History of South Dade County, Apr. 17, 1959, EVER 22965.

Campgrounds

NPS planners had not anticipated that many visitors would want to camp in the park, but a strong demand for campgrounds developed. Early planning had contemplated only a small campground as part of the Flamingo development. The park allowed primitive camping on Parachute Key and Royal Palm Hammock in the 1950s until the Flamingo campground opened in 1958. Continued strong interest in camping resulted in the expansion of the Flamingo facility and the development of a second campground on Long Pine Key as detailed below.³⁴³ The park's development of backcountry campsites is covered in Chapter 10.

Flamingo Development

By April 1953, the decision to concentrate visitor services at Flamingo had been reaffirmed. Superintendent Beard was already thinking in terms of a “multipurpose public services building” as well as a restaurant, marina, campground, and picnicking area. The functions concentrated here were similar to those at first planned for Cape Sable in 1948. The NPS would soon adopt the term “visitor center” for a multipurpose public services building. As indicated above, the campground was added to the program based on visitor demand. Beard had never been keen on having a lodge or cabins at Flamingo. Conservation groups pressured NPS Director Conrad Wirth, who took over from Newton Drury in December 1951, to eliminate overnight accommodations from the master plan. As described below, political pressure from the state of Florida ultimately compelled the NPS to build a lodge. By 1954 or 1955, the NPS had decided to include NPS employee housing and a secondary maintenance area at Flamingo.³⁴⁴

NPS architect Cecil Doty was assigned to Everglades National Park for the months of April and May 1954 to assist in “working up architectural studies” for the Flamingo development. Doty, who had thoroughly embraced modernism, favored designs with “flat roofs, stark geometric massing, and contemporary materials.” In July, Doty produced seven pages of drawings for a complex at Flamingo. The centerpiece was a long, horizontally oriented public services building fronting on Florida Bay (figure 7–7, Cecil Doty's drawing of Flamingo Visitor Center). All major functions except storage were located on the second floor, which was raised on concrete pylons, to keep the operations above the effects of hurricane storm surge. The NPS wing on the east was to have a small museum, offices, and restrooms. The concessioner's wing was to include a gift shop, coffee shop, and full-service-restaurant. The raised main floor was reached by ramps, and the two sections were connected by a screened lounge. Doty's drawings also included a

³⁴³ SMR, Feb. 1950, Jan. 1951, Mar. 1955.

³⁴⁴ The board of trustees of the National Parks Association commended Wirth's decision against building a lodge at Flamingo. “New Everglades Policy,” *National Parks Magazine* 29/120 (Jan.–Mar. 1955), 4.

separate lodge to the west, a service station, and a comfort station design, to be repeated as needed for picnic and campground areas. In a birds-eye view of the whole development, the architect drew in a marina area, but he did not provide drawings or plans for any of its constituent buildings (figure 7–8, Cecil Doty’s birds-eye view or proposed Flamingo development).³⁴⁵ Doty’s preliminary studies served as a template for a request for proposals that the NPS released to prospective concessioners in October 1954. The service was looking to grant a 20-year concession to a firm that would commit to a construction program of at least \$500,000 (2014 equivalent of \$4.4 million). Interested parties were asked to include in their proposals:

1. A public service center with restaurant, grocery, and curio sales room;
2. Overnight accommodations for at least 60 persons;
3. An automobile service station;
4. Facilities for the rental, mooring, repairing, and servicing of boats;
5. Boats for providing sightseeing tours; and
6. Housing facilities for concessioner employees.

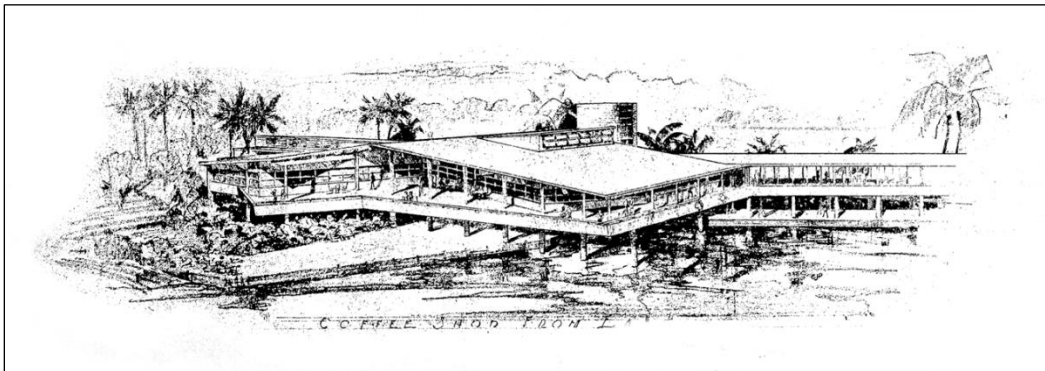


Figure 7–7, Cecil Doty’s drawing of Flamingo Visitor Center

The request further mentioned that a swimming pool might later be added to the program if a need for one arose.³⁴⁶ As mentioned above, Director Wirth had eliminated overnight accommodations for visitors from the program. In the postwar automobile era, the service was more and more inclined to keep lodges and cabins outside park boundaries. Wirth had been getting pressure from conservation organizations, including the National Parks Association and National Audubon Society, not to allow a lodge in the Everglades. The director, however, did not rule out a lodge at some future date. If a few years’ experience operating at Flamingo showed that the round-trip to lodgings in the Homestead/Florida City area seriously interfered with visitor enjoyment, the NPS would revisit the lodging question. The director found the decision between the two proposals a difficult one.

³⁴⁵ Carr, 140–141; Drawing NP-EVE-1006.

³⁴⁶ RDR1 Elbert Cox to Dir., Mar. 3, 1954, NARA II, RG 79, NPS AF, box 992; Supt. Beard to RDR1, Mar. 29, 1949, NARA Ph, RG 79, 79–58-A-360, box 8.

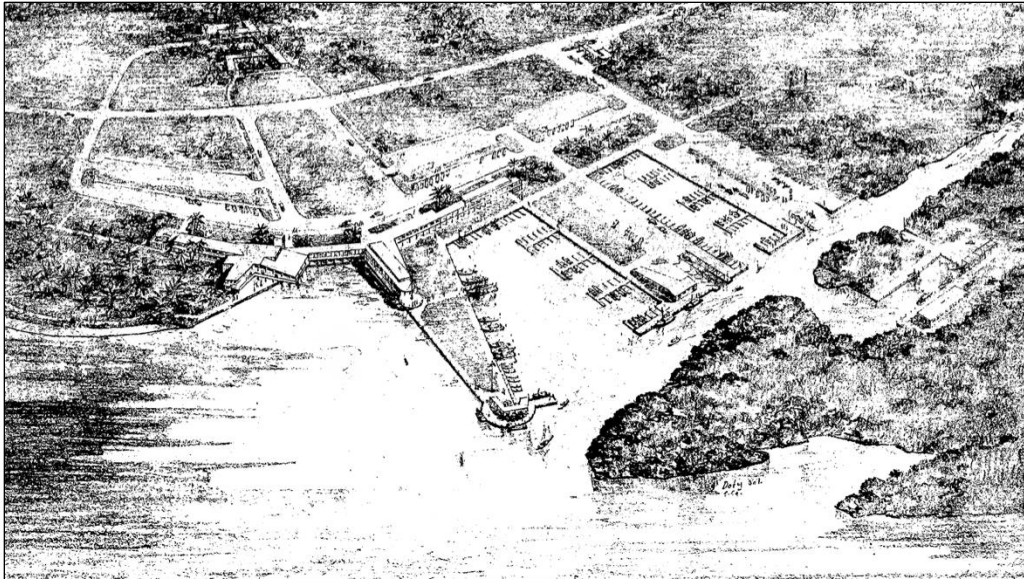


Figure 7-8, Cecil Doty's birds-eye view or proposed Flamingo development

Only two firms, the Fred Harvey Company and a company newly formed by Miami business owners, the Everglades Park Concessions Company, submitted proposals that fully met all of the NPS's requirements. The Fred Harvey Company had a long history of successful operations in other national parks while the NPS generally preferred locally based concessioners. Superintendent Beard believed that Harvey had a clear edge in "management ability and finances." Conversely, it was clear that the service would reap considerable good will in Florida by choosing the Miami outfit. Wirth decided to proceed with negotiations with the Everglades Park Concessions Company, which soon shortened its name to Everglades Park Company (EPC).³⁴⁷

Local opinion was delighted by the choice of a Miami firm but dismayed by the elimination of a lodge. In addition, the EPC balked at committing \$500,000 to a scheme that now lacked the biggest potential source of income, overnight lodging. John Pennekamp and the *Miami Herald* were in the forefront of the campaign to get a lodge included in the Flamingo development. In May 1956, a *Herald* editorial chided: "The latest spate of double-talk from Washington fails to answer the question: Why can't people sleep in the Everglades National Park?" Pennekamp, Florida Senators Holland and George Smathers, the South Florida AAA, and various Florida chambers of commerce flooded the DOI with letters demanding that the lodge be restored to the program. Pennekamp wrote

³⁴⁷ Dir. Wirth to Asst. Dir. Thomas J. Allen, Mar. 16, 1955, Smathers papers, box 21; Asst. Dir. Thomas J. Allen to Everglades Park Concessions Co., Mar. 17, 1955, NARA Ph, RG 79, 79-62-A-420, box 2; Carr, 98; Daniel Beard to Dir., Jan. 14, 1955, NARA Ph, RG 79, 79-62-A-420, box 2. Stockholders in the EPC were A. M. Tyler, W. T. Rose, Alan B. Kessler, George A. Pegram, and Robert B. Knight, all of Miami. In comparing the two proposals, Beard displayed his erudition by quoting the English poet John Gay (1685-1732): "How happy could I be with either, were t'other dear charmer away," a lyric from *The Beggar's Opera*.

Holland that Wirth's position was "preposterous" and "untenable." Holland responded that "Connie means well but he is a stubborn fellow" and perhaps did not wish to be seen as being pushed around by a newspaper. As mentioned in Chapter 6, the issue was resolved in favor of a lodge when Florida Governor LeRoy Collins made it clear that he would not convey any more state-owned land for the park unless the lodge was built. Within days of his February 16, 1957, meeting with the governor, Wirth announced that the lodge would be built. To justify his change of position, he pointed to a hastily prepared report of an NPS special study committee, which concluded that a lodge would in no way impair park values.³⁴⁸

The NPS's decisions in the 1950s to cut a new park road into the Everglades and authorize construction of a sixty-room lodge suggest that the service's policies on the development of wilderness areas were rudimentary in this period. In spite of the wilderness guarantee enshrined in the 1934 act, there is no evidence that the NPS studied the impacts of the proposed development on wilderness values. The extensive dredging done in offshore waters to provide fill for the Flamingo developed area, for example, seems not to have raised concerns. Of course, neither the Wilderness Act nor the National Environmental Protection Act had yet been passed, and the service lacked guidelines for measuring the environmental impact of development schemes. Agency managers trusted their judgments and sincerely believed that keeping development to a small footprint would adequately protect wilderness values.

The NPS wanted a unified architectural expression for the buildings at Flamingo. The EPC had retained Coral Gables architect Harry L. Keck to design the restaurant/gift shop portion of the public services building, as well as a gas station. The NPS decided to use Keck for the visitor center/office portion of the public service complex and for a marina services building, with the understanding that Keck would be guided by Cecil Doty's overall scheme. Keck's design for the visitor center/restaurant building largely followed Doty's ideas (figure 7–9, architect's model of Flamingo visitor center and concession building, 1957). Keck retained the windowless squat tower faced with local limestone to house utilities for the restaurant; this single vertical element balanced the overwhelmingly horizontal emphasis of the complex. Keck eliminated a semicircular observation platform projecting from the NPS wing.³⁴⁹

³⁴⁸ "Why Discriminate Against Everglades?" *Miami Herald*, May 22, 1956; South Florida AAA Board to Dir. Wirth, n.d., NARA Ph, RG 79, 79–62-A-420, box 27; John Pennekamp to Sen. Holland, Jan. 15, 1957, Gov. Collins papers, box 73; Sen. Holland to Ray Green, State Comptroller, Feb. 19, 1957, SLH papers, box 359; John E. Doerr, NPS Chief Naturalist, "Report of a Special Study of Overnight Accommodations in Everglades National Park," Feb. 13, 1957, NARA Ph, RG 79, 79–68-A-2955, box 45.

³⁴⁹ Noted American industrial designer Russel Wright (1904–1976) found the visitor center and other Flamingo structures unimpressive. He thought "a talented architect could have made use of materials indigenous to the southeast and could have much better complemented this great landscape." Russel Wright to J. E. N. Jensen, NPS Assoc. Dir., Feb. 19, 1969, HF.

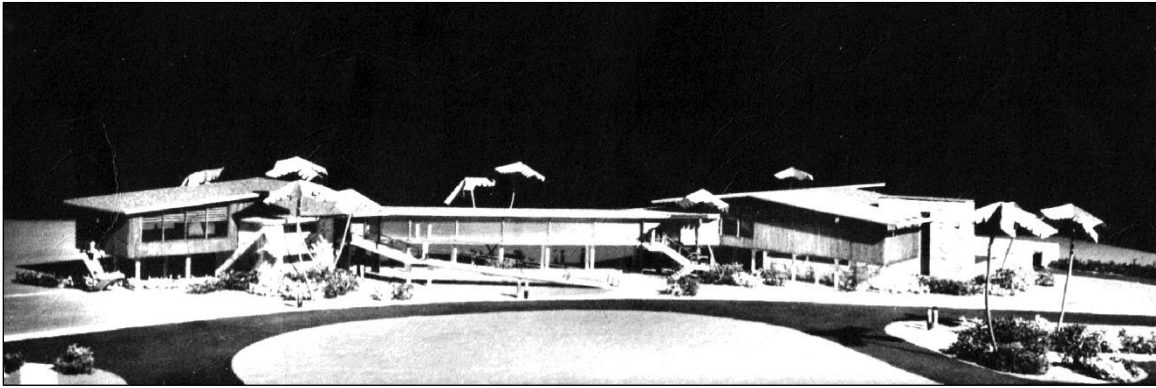


Figure 7–9, architect’s model of Flamingo visitor center and concession building, 1957

Site preparation at Flamingo began in 1955, with offshore dredging of limestone, both to create channels and boat basins and to provide fill to support building foundations. Roads and parking areas were finished in 1956. In 1957, the service station, marina store, electrical generating plant, the visitor center, and the five buildings of the lodge were completed. The first building in the NPS housing area, east of the visitor center complex, was a four-unit apartment building. Landscape plantings at Flamingo were chosen for their color and sculptural form and included Spanish dagger, philodendron, prickly pear, euphorbia, and coconut palms.³⁵⁰ Miami architect Gordon Severud designed the lodge buildings, containing sixty rooms for guests and quarters for concessioner employees. On December 20, 1957, the NPS visitor center and concessioner operation at Flamingo opened to the public. In winter 1958/59, the Flamingo campground (Loop A, fifty-four sites) and picnic area (sixty sites) opened, with five comfort stations and a camp tender’s residence (figure 7–10, Flamingo comfort station). A temporary amphitheater for ranger talks and other activities was opened in February 1959; it is unclear whether this was at the visitor center or one of the camping loops. From 1959 to 1960, the buildings at the Flamingo maintenance area were completed, and a swimming pool was added to the lodge complex. Water for Flamingo was piped in from a twenty-five-foot-deep well located sixteen miles up the main park road.³⁵¹

The original waste water treatment system at Flamingo sent treated effluent to an eight-acre artificial settling pond. The pond became a favored habitat for wildlife, in particular migratory and resident birds. The park christened the feature the Eco Pond and built a viewing platform for visitors adjacent to it (see Chapter 20). The Eco Pond emerged as a

³⁵⁰ As NPS attitudes toward nonnative plantings evolved, the nonnatives were removed, including several hundred coconut palms in 1979. SAR 1979.

³⁵¹ SMR, Dec. 1957, Feb. and Mar. 1959; Asst. Supt. George Fry to John Balfe, Managing Editor, History of South Dade County, Apr. 17, 1959, EVER 22965. Everglades Park Company briefly took over the temporary concession operation at Coot Bay until that operation was shut down in Mar. 1955, SMR, Apr. 1955.

popular spot for visitors to observe wildlife. In April 1994, the Florida Department of Environmental Protection detected fecal coliform bacteria in well water supplied to Flamingo. A difference of opinion then arose as to whether the NPS needed a state permit for the Flamingo wastewater treatment system. The park erected a fence to prevent visitor access to the Eco Pond while maintaining the viewing platform. After negotiations between the NPS and the state, the park agreed to apply for a state permit and move to address issues with the Flamingo water treatment system. Ultimately, the park obtained funding to completely overhaul the Flamingo system, completing that work in 2004.³⁵²

Hiking trails were always part of the plan for Flamingo and nearby areas. The service also planned to convert some existing primitive roads used by Flamingo residents since the 1920s to administrative roads/trails. The Coastal Prairie Trail and the Mangrove Trail were completed about the same time as the opening of the Flamingo Visitor Center. The Coastal Prairie Trail originally ran a distance of 7.5 miles west from the Flamingo Visitor Center toward near East Cape Sable. In 1965, the portion of this trail from the visitor center to the Flamingo Campground was renamed the Guy Bradley Trail to honor the game warden killed in 1905 (see Chapter 2). The Mangrove Trail (now the West Lake Trail) is a half-mile boardwalk loop at the West Lake pull-off. The 1.8-mile-long Snake Bight Trail follows the route of an old marl-surfaced road that ran from the Ingraham Highway to Snake Bight. Bear Lake Road, 1.85 miles long, is the old north-to-south-running road that parallels the Buttonwood Canal. The NPS added a 1.6-mile-long trail from the end of this road west to Bear Lake. The 2.6-mile-long Rowdy Bend Trail departs from the main park road three miles from the Flamingo Visitor Center and runs to the Snake Bight Trail. In the 1960s, rangers led autocades on some of these roads/trails. From the 1970s through the 1990s, the concessioner at Flamingo ran tram tours on the Snake Bight and Rowdy Bend Roads. The Christian Point Trail is a 1.8-mile-long, pedestrian-only trail that departs from the main park road one mile from the Flamingo Visitor Center.³⁵³

³⁵² Richard N. Koller, Project Engineer, AB2MT Consultants, to Dr. Harley Young, P.E., Florida DEP, Dec. 2, 1993; David C. Schwartz, Asst. General Counsel, Florida DEP, to John H. Harrington, Asst. Regional Solicitor, DOI, Feb. 10, 1995; Michael Jester, interview by author, Jan. 19, 2012.

³⁵³ SMR, Apr. 1958; Everglades National Park brochure, 1962; Acting RD, SERO, to Supt, EVER, June 10, 1965, NARA Ph, RG 79, 79-69-A-384, box 28; "Everglades National Park Statement for Interpretation," 1995, EVER-00619.



Figure 7–10, Flamingo comfort station

The Buttonwood Canal

Part of the NPS development at Flamingo was the construction of the Buttonwood Canal. The service extended and widened the existing Flamingo Canal to allow boaters and fishermen to travel between Florida Bay and Whitewater Bay by way of Coot Bay. The fifty-six-foot-wide canal was opened in August 1957. Unfortunately, the canal allowed an exchange of water between Florida Bay and Whitewater Bay, significantly increasing the salinity of the latter. In addition, erosion of the canal banks introduced large amounts of mud and silt into Coot and Florida Bays. The environmental damage caused by the canal was readily apparent by the early 1960s. The service debated the plugging of Buttonwood Canal for two decades, weighing the environmental damage against the popularity of the canal connection among boaters. By 1972, tidal flows had widened the canal to a width of eighty to ninety feet. The Corps of Engineers agreed to a contract in late 1981 for the construction of a plug at the Florida Bay end, which was completed in July 1982.³⁵⁴

On September 10, 1960, Hurricane Donna passed over Flamingo, with a storm surge estimated at twelve feet. The storm heavily damaged the visitor center, boat shop, and maintenance office and left the campground comfort stations and camp tender's residence with only their walls standing (figure 7–11, Flamingo comfort station after Hurricane

³⁵⁴ Gary E. Davis, "The Buttonwood Canal—Dam It," Dec. 1976, James Tilmant, Marine Research Biologist, to Supt., through Research Director Gary Hendrix, June 11, 1987, EVER 42242; Buttram, Trebellas, Memory, and Odgen, 72.

Donna, Oct. 1960). Many plantings were also uprooted or killed. Extensive repairs and rebuilding were carried out during 1961 and 1962. The park awarded a contract for rebuilding the five comfort stations and replacing the camptenders' residence. In the repair of the visitor center, awning windows replaced the original fixed-pane windows on the east side of the lobby.³⁵⁵



Figure 7-11, Flamingo comfort station after Hurricane Donna, Oct. 1960).

A number of additions and improvements were made to the Flamingo developed area over the years. Work began in 1963 for the extension of the Flamingo campground, eventually resulting in camping loops B, C, and T (sixty-five pull-through sites for trailers), along with attendant comfort stations. In 1964, sixty rooms in two new buildings (Buildings F and G) were added at the lodge, along with twenty-four light-housekeeping cottages in twelve duplex buildings. Additional employee housing, dubbed Smith Hall, was put up in 1965. In January 1967, a new temporary amphitheater was built near the Flamingo Visitor center and remained in use into the mid-1970s. In 1976, a Youth Conservation Corps (YCC) crew built a new amphitheater at the east end of the walk-in campground. In 1986, the park rehabilitated the amphitheater and provided it with electrical service. That same year, the gas station at Flamingo was closed and the building converted to a post office. The Flamingo concessioner, T. W. Recreational Services, in 1991 added employee housing. The employee housing area at Flamingo lies east of the visitor use area. The park constructed several four-unit apartment buildings between 1966 and 1968. The living spaces were raised on pylons, with only garage and storage space at the first floor (figure 7-12, employee apartments at Flamingo, 1967). New NPS housing units were also added in the 1980s.³⁵⁶

³⁵⁵ NPS, "National Park Service Restoring Flamingo Structures," press release, Nov. 4, 1960, EVER 22965.

³⁵⁶ SMR, July 1964, Jan. 1967; SAR, 1986, 2006; Michael Jester, personal communication, Aug. 29, 2013. See chapter 23 for the evolution of Flamingo concession operations.

Hurricane Andrew in August 1992 did some damage to the Flamingo structures, resulting in new roofs being placed on the visitor center and marina store buildings. In the 1990s and 2000s, new comfort stations replaced all of the Mission 66-era stations in the campgrounds. In addition, in 2004, the lodge swimming pool was filled in and capped and the original camptender's residence was demolished. Two hurricanes in 2005, Katrina in August and Wilma in September, did extensive damage at Flamingo. A wood-framed building known as the concessioner clubhouse was devastated by Katrina and immediately demolished. Subsequently, four wood-framed dormitory buildings (Buildings A, B, C, and D) were also demolished. The park replaced the damaged amphitheater at the Flamingo campground. The hurricanes severely damaged the lodge buildings and the twelve duplex housekeeping cabins. All of these buildings remained unusable while the park considered its options. Members of local communities were nearly unanimous in believing that overnight lodging had to be again made available at Flamingo. There was little interest in elaborate, resort-type development, but it was considered critically important that clean, comfortable overnight lodging continued to be available. The park initiated work on a Flamingo Commercial Services Plan in 2006, to proceed in tandem with the park's ongoing general management plan (GMP) process. As planning went forward, all of the old lodge buildings, the duplex cabins, and the north half of the maintenance office were demolished in 2009 and 2010. A number of the buildings at Flamingo, however, have been determined to be eligible for the National Register of Historic Places (see Chapter 17).³⁵⁷



Figure 7-12, employee apartments at Flamingo, 1967

³⁵⁷ SAR, 2006, 2007; Michael Savage, personal communication, June 28, 2013; Michael Jester, personal communications, Aug. 29, 2013, and Oct. 16, 2014. Development at Flamingo remained a source of controversy among conservationists. In commenting on the park's draft master plan in 1977, the Friends of the Earth branded the development at Flamingo an "eyesore" and suggested it not be rebuilt "next time it is leveled by a hurricane." Chuck Williams, Friends of the Earth to Supt. John Good, Nov. 22, 1977, TWS papers.

The Flamingo Commercial Services Plan was approved July 23, 2008, and served as the basis for a Flamingo Master Plan and Design Program, released in 2010. The Flamingo envisioned in the master plan was to be “hurricane, flood and climate change resistant” and incorporate “state-of-the-art sustainable technologies.” New construction was to be elevated to protect it from flooding, and solar collectors and other sustainable technology were to be incorporated. The master plan included a complete rebuilding of the area, with a thirty-unit lodge, twenty-four cottages, ecotents, an expanded visitor center, an upgraded campground, and improved marina facilities. The total cost was estimated at \$78 million, with the lodge alone running \$15 million. NPS Director Jon Jarvis reviewed the plan and concluded that it was deficient in sustainability in light of the prevalence of hurricanes and the danger of sea level rise. He also found the cost of the plan excessive given the budgetary constraints confronted by all federal agencies. The director requested that the planning team reexamine the proposed Flamingo facilities to identify a more sustainable solution for a fifty-year time horizon, focusing on adaptability to storms and sea level rise and a more feasible capital cost. The park took another look at the issues and made some revisions that were then incorporated into the park’s draft GMP. The preferred alternative in the draft GMP eliminates a lodge and calls for concessioner-operated overnight accommodations that could include cabins, houseboats, and ecotents, as well as food service. Ecotents are permanent, sometimes movable, tents with minimal impact on the natural environment. They typically have canvas walls, are raised above the ground on platforms, may use recycled materials, and sometimes have features such as solar water heaters for showering. A prototype ecotent, developed by the park in partnership with the University of Miami and the South Florida National Parks Trust, was rented to visitors from December 14, 2012, to April 14, 2013. All new facilities at Flamingo are to be “either mobile/seasonal . . . or elevated/hardened/re-locatable.” The redesigned Flamingo would be considerably more pedestrian and bicyclist friendly, and approximately fifty acres would be restored to more natural conditions. The park’s ongoing efforts to find a concessioner for Flamingo are covered in Chapter 23.³⁵⁸

The Coming of Mission 66

While the controversies over the main park road and lodging at Flamingo played out, the NPS was lobbying hard for an unprecedented comprehensive construction program that would last ten years. The brainchild of Director Wirth, the Mission 66 program aimed to significantly increase the service’s construction budgets and revamp its planning process to reflect postwar changes, notably the greatly increased number of automobile tourists. Wirth started planning the program early in 1955. Each park was to come up with a Mission

³⁵⁸ *Draft GMP*, 37–38, 56; Fred Herling, personal communication, Oct. 17, 2014; NPS, “Flamingo Master Plan and Design Program—Summary Brochure,” <http://www.nps.gov/ever/parkmgmt/flamingomasterplan.htm>; “Everglades Shelves Lodge Reconstruction,” *keysnews.com*, Nov. 20, 2011; “Everglades National Park to Try Moveable ‘Eco-Tents’ for Flamingo Area Lodging,” *National Parks Traveler*, Dec. 14, 2012.

66 prospectus, and a few parks, including Everglades, were chosen as pilot parks to develop a prospectus in advance of the other units. Superintendent Beard forwarded a first draft of the Everglades Mission 66 prospectus at the end of June 1955. He then conferred with the Eastern Office of Design and Construction and national Mission 66 managers to revise it. Many of the decisions on Everglades development that had already been made were incorporated into the Mission 66 plan. In January 1956, President Eisenhower signed off on the general program of Mission 66, including a commitment to increased spending, although he insisted that the NPS continue to submit its budgets annually to Congress. The director gave final approval to the Everglades Mission 66 prospectus in September 1956. The park's prospectus reaffirmed the decision to concentrate visitor services at Flamingo, including the interpretive center, restaurant, marina, campgrounds, boat rentals, camping, picnicking, a ranger station, and NPS housing. The plan called for a second campground, near Royal Palm Hammock, but not on it, to avoid traffic congestion. Pine Island was to continue as the site of the main maintenance center and the location of employee housing. Subsidiary visitor contact facilities and ranger stations were slated for Everglades City, the Tamiami Trail, and Key Largo. Everglades City and Key Largo were also to have boat launching facilities. Early versions of the Mission 66 prospectus had park headquarters in Homestead on U.S. 1, until the decision was finally made to keep it inside the park on Parachute Key. Mission 66 brought increased funding, allowing the NPS to more quickly accomplish the development of Everglades National Park (figure 7–13, park sign for Mission 66 project).³⁵⁹



Figure 7–13, park sign for Mission 66 project

³⁵⁹ Daniel Beard to Dir., June 30, 1955, NARA Ph, RG 79, 79–66-A-661, box 25; Lemuel Garrison, Chairman, Mission 66 Steering Committee, to Dir., July 18, 1955; E. T. Scoyen, Acting Dir, to RDR1, Sept. 8, 1956, Everglades National Park 1957–1966 Comprehensive Program, 1955, NARA Ph, RG 79, 79–66-A-661, box 25; Carr, 82–85, 115.

Park Headquarters/Visitor Center

In all of its planning, the NPS envisioned park headquarters being co-located with a modestly sized visitor center that would serve to orient visitors to the park and its features. Armed with a park map and perhaps a self-guiding brochure, visitors would then proceed into the park, with the option of getting more interpretive information at the visitor centers at Royal Palm and Flamingo and via waysides. As a step in this direction, by winter 1951/52 a temporary checking station, a simple chickee, was in operation at the park entrance (figure 7–14, Chickee checking station). The overall concept for the main park entrance was reaffirmed when the national Mission 66 committee visited Everglades in April 1957. In July 1959, a \$331,000 contract was awarded to the Eddy Construction Company of Homestead covering the headquarters/visitor center complex and an entrance or checking station, with construction beginning in October. The architects were the Eastern Office of Design & Construction; Edward M. Ghezzi, Homestead; Francis Telesca, Miami; and Harry L. Keck, Coral Gables. The visitor center and headquarters were separate concrete structures connected by a covered breezeway (figure 7–15, main visitor center).³⁶⁰



Figure 7–14, Chickee checking station

³⁶⁰ H. Maier to Lemuel Garrison, Apr. 15, 1957, ENP CR files; “Contract Awarded for Visitor Center-Headquarters Building in Everglades National Park,” DOI press release, July 9, 1959, SLH papers, box 488; Visitor Center Dedication Program, Dec. 9, 1961, NARA Ph, RG 79, 79–69–5662, box 31; SMR, Nov. 1951, Dec. 1956, Oct. 1959, Oct. 1960, Feb. 1961; *The Anhinga*, Aug. 1963.



Figure 7–15, main visitor center

The visitor center was a thoroughly modernist, flat-roofed, double-height space, 146 by 74 feet. The interior, with a coffered concrete ceiling, contained exhibits and a theater area for slide shows and films (figure 7–16, interior of main visitor center). The lower level walls were almost all glass and the upper levels were covered by perforated concrete screens. Because visitors were expected to make only a brief stop at the facility before entering the park, the visitor center was not air-conditioned. In keeping with the NPS’s modernist bent, the furnishing plan called for Eero Saarinen molded plastic chairs, Herman Miller sofas, and Florence Knoll tables (figure 7–17, furnishing plan for main visitor center). The borrow pit east of the visitor center, which provided the limestone for the foundations, was made into a pond. Plantings around the HQ/VC used a number of exotic species. The headquarters building was occupied in October 1960, and final acceptance came in February 1961.³⁶¹



Figure 7–16, interior of main visitor center

The new visitor center was dedicated as part of the festivities marking the park’s 14th anniversary on Saturday, December 9, 1961. Director Wirth was the keynote speaker. Senator Holland, Congressman Dante Fascell, Regional Director Elbert Cox, and William A. Kidd, administrative assistant to Florida Governor Farris Bryant, also spoke to a

³⁶¹ “Everglades Visitors [sic] Center Open for Business,” *New York Times*, Jan. 22, 1961.

crowd of about 500 people. The lack of air conditioning in the visitor center soon proved a problem, and the center itself was damaged by Hurricane Betsy in September 1965. The building was closed for repairs and remodeling, reopening to the public May 15, 1966; the lobby was air conditioned at this period. Changes to the exhibits in the visitor center are addressed in Chapter 20.³⁶²

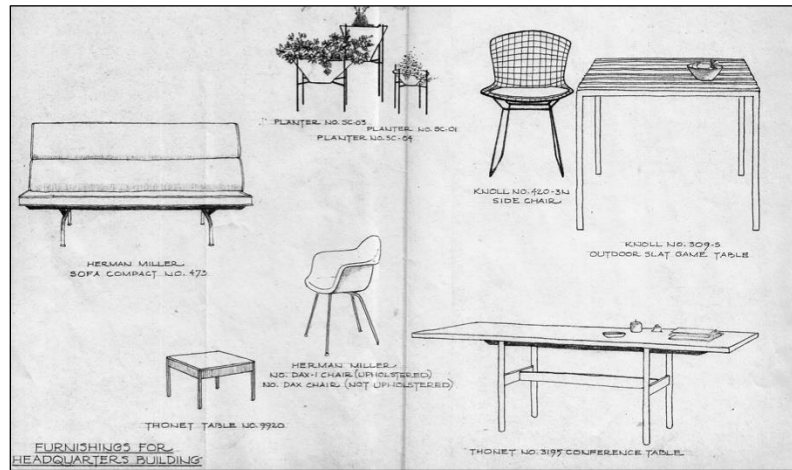


Figure 7-17, furnishing plan for main visitor center

The visitor center and nearby park headquarters took a direct hit from Hurricane Andrew in August 1992. Headquarters required major repairs and reconstruction, and the visitor center could not be salvaged. In September 1993, the remains of the visitor center were removed. A temporary visitor center was established in a modular building adjacent to the parking lot. Using hurricane recovery funds, the NPS in 1993 and 1994 repaired and remodeled the headquarters building, constructing a hipped metal roof over the original flat roof. Soon thereafter, a new, freestanding visitor center was built. Ground-breaking for the \$3 million visitor center, designed by Grieves, Worrall, Wright, and O’Hatnick of Baltimore, came in January 1995. Named the Ernest F. Coe Visitor Center, it was dedicated on December 6, 1996. Congressman Dante Fascell and NPS Regional Director Jerry Belson spoke, and Ms. Nancy Franklin, Ernest Coe’s niece, offered some memories of her uncle. The visitor center is a single-story building with a standing-seam metal roof that matches the roof on headquarters. The visitor center houses a bookstore, exhibit space, and a theater. A comfort station in a separate building and an orientation pavilion are near the entrance to the visitor center, connected to it by a boardwalk. The Everglades Association spent \$82,000 for the design and construction of the Everglades Discovery bookstore in the new visitor center (figure 7-18, Ernest F. Coe Visitor Center).³⁶³

³⁶² Supt. Hamilton to RDR1, Nov. 10, 1961, NARA Ph, RG 79, 79-66-A-661, box 22; “Visitor Center Dedicated,” *South Dade News Leader*, Dec. 12, 1961; SMR, Sept. 1965, May 1966.

³⁶³ SAR, 1993; “Groundbreaking for New Main VC Set for Jan. 12, 1995, DOI press release, Dec. 30, 1994, EVER 58222; “Ernest F. Coe Visitor Center Dedication and Fiftieth Anniversary Inauguration,” program, Dec. 6, 1996, EVER 58222; Florida National Parks and Monuments Association Annual Report, 1997, FNPMA papers; Michael Savage, personal communication, June 26, 2013.



Figure 7–18, Ernest F. Coe Visitor Center

Pine Island

From the earliest planning efforts in the late 1940s, Pine Island had been earmarked for employee residences and maintenance operations. The first quarters building was constructed in 1950, with three more added in 1951, designed by Fred Keck. In 1953, the park added a maintenance shop and offices, a 43-foot-by-156-foot building. The 1958–1959 season saw the construction of five employee residences, several apartment and dormitory buildings, two equipment sheds, a water system, and a 5,600 square-foot equipment storage/warehouse structure. In this same period, the park dug a twenty-foot well to supply water to Pine Island and laid out approximately nine miles of unpaved fire roads. As described in Chapter 15, Pine Island was part of the park’s prescribed fire program. In 1989 and 1990, the Florida National Parks and Monuments Association, the park’s cooperating association, built a new, 4,000-square-foot office/warehouse structure. Hurricane Andrew in August 1992 damaged three residences at Pine Island beyond repair, and they were demolished (see Chapter 16). As of 2005, the Pine Island residential area had nine single-family houses, three duplex units, and several mobile homes (figure 7–19, employee residence at Pine Island). Between 2000 and 2006, several utility structures were erected, including a laundry building and a wastewater treatment facility. Buildings at Pine Island will be evaluated as part of a Mission 66 National Register nomination that is to be prepared.³⁶⁴



Figure 7–19, employee residence at Pine Island)

³⁶⁴ Asst. Supt. Fry to John Balfe, Apr. 17, 1959, EVER 22965; FY 1990 Annual Report, Florida National Parks and Monuments Association; Everglades National Park Housing Management Plan, Mar. 21, 2005, FNPMA papers; SMR May 1950, July 1951, June 1953; EVER maintenance division database of structures; personal communication, Cynthia Walton, Oct. 21, 2013.

Long Pine Key

The NPS developed the park's second campground and an associated picnic area on Long Pine Key, down a short dead-end road running south from the main park road. In 1957, the service had already installed about twenty miles of fire roads on the key to facilitate its prescribed burn program (see Chapter 15). The campground was opened for primitive camping by the winter of 1960/61 although the camp tender's residence and four comfort stations were not ready until the following winter. A fifty-seat amphitheater for ranger talks and other activities was also created. After opening with seventy-three picnic sites and fifty-nine campsites, the facility in 1963 and 1964 was extended to 108 campsites, with two additional comfort stations (figure 7-20, laying a concrete pad at Long Pine campground). In 1968, in response to complaints that too much of the park was "locked up," Superintendent Allin approved the conversion of two fire roads on Long Pine Key to "primitive auto trails." The park created two gravel-surfaced loops, of three and five miles respectively. Park naturalists were not very pleased with this decision to allow more cars in the pine uplands. When the park decided in 1974 to designate much of the key as wilderness, the motor loops were converted to hiking trails (see Chapter 10). At present, the key has a 6.7-mile-long hiking/biking trail that runs in a generally westerly direction from the campground to the main park road at Pine Glades Lake. The other trails are for hiking only and also serve as fire roads. Long Pine Key received a new entrance station in 1992.³⁶⁵



Figure 7-20, laying a concrete pad at Long Pine campground

³⁶⁵ SMR, June 1961, Oct. 1963; ENP press release, March 28, 1968, WNRC, Records of Biological Resource Division, NPS WASO, 79-85-8, box 10; Michael Jester, personal communication, Aug. 29, 2013.

Tamiami Developed Area/Shark Valley

When Everglades National Park was established in 1947, a seven-mile-long, dead-end road running south from the Tamiami Trail on the western edge of Shark Slough already existed. The Humble Oil and Refining Company cut the road in 1946 in order to drill two exploratory oil wells, one about two and one-half miles south of the Tamiami Trail and the second at the end of the road. Material for the road bed was dredged from alongside the road, creating a canal. Humble dug a moat around the site of the well at the end of the road to provide fill for a drilling platform. Both of the wells came in dry, and the entire property became part of the park. In 1952, the park converted a shelter at the well site closest to the Tamiami Trail to a temporary ranger outpost. That same year, the NPS erected a steel-frame fire observation tower at the end of Seven-Mile Road. Later in 1952, the park stopped using the ranger outpost in Shark Valley and established a ranger station about five miles to the west at the Szady property near the forty-mile bend on the Tamiami Trail. This was one of the service stations and restaurants that had been established at ten-mile intervals when the trail was opened in the late 1920s. Seven-Mile Road remained closed to the public although rangers at times brought special groups in.³⁶⁶

At one time, NPS planners wanted to locate the Tamiami District ranger station at Seven-Mile Road, but it has remained at the site of the Szady property. At first the NPS used existing buildings at the site, which included an office/bunkhouse building, residence, and two-car garage. Over time, these were all replaced with new buildings. Newly arriving staff at the ranger station were warned that children would have to be driven ten miles to the nearest school bus stop. By the late 1970s, three residential trailers had been installed. In the 1980s, the park added two permanent residences for law enforcement rangers and a new ranger station and maintenance office structure.³⁶⁷

From early on, NPS planners wanted to provide visitor access to Shark Valley, one of the best places in the park to experience sawgrass marshes and view wildlife. In 1964, Accelerated Public Works funding (i.e., funding outside of regular National Park Service appropriations) became available. The service hurriedly prepared plans to convert the dead-end road to a one-way loop road by creating a new curving road connected to the east side of the existing road. The idea was that visitors would drive south on the new serpentine road segment and return on the straight-line road segment. The existing steel-frame fire tower would be replaced by a combination fire lookout/observation tower to provide visitors with a commanding view over the sawgrass marshes of the Shark Slough. Four borrow pits, twenty to twenty-five feet deep, were excavated to provide fill for the new roadbed, and these were

³⁶⁶ SMR, Jan. 1952; Sandy Dayhoff, *Chronology of Shark Valley*, May 1, 1981, EVER 22965.

³⁶⁷ Booklet for NPS families arriving at Everglades, undated [1960s], EVER 60322; "Resource Management & Visitor Protection & Safety, FY 1980," June 1979, EVER-1741.

eventually filled with water to form small lakes. At the suggestion of Ranger Irwin Winte, the road was routed around Otter Cave Hammock, where limestone openings led to a cave sometimes occupied by otters.³⁶⁸

The Shark Valley observation tower, completed in November 1964, is one of the most dramatic expressions of Mission 66 modernism. The reinforced-concrete tower rises fifty-five feet above the surrounding marsh, with an observation platform at thirty-five feet. The platform is reached by a broad curving ramp. A 1,600-square-foot circular one-story building near the entrance to the ramp contained a comfort station and studio apartment (figure 7–21, Shark Valley tower). Plans for the tower and comfort station were prepared by the NPS Eastern Office of Design & Construction, with architect Benjamin Biderman receiving credit as designer. Biderman was also involved in the design of the Look Rock Tower at Great Smoky Mountains National Park. The Look Rock Tower and a ramped observation tower at Clingman’s Dome in Great Smoky Mountains heavily influenced the design of the Shark Valley Tower. The local associated architect for the Shark Valley structures was Edward Ghezzi. The new road, renamed the Shark Valley Loop Road, opened to the public on February 4, 1965. In these early years, the road was open to automobiles, when water levels were not too high.³⁶⁹



Figure 7–21, Shark Valley tower

³⁶⁸ Regrettably, it has been many years since otters have been observed at the hammock.

³⁶⁹ SMR, Nov. 1964, Feb. 1965; Ernst Christensen, “The Shark Valley Loop Road,” *The Anhinga*, October 1964; Dayhoff, Chronology; Program, Rededication of Shark Valley, 1987, ENP CF; Edward H. Abbuehl to Pat Tolle, Apr. 1, 1991, EVER 58222; “Form and Function,” *Miami Herald*, Sept. 9, 2007; Wiss, Janey, Elstner Associates, Inc., “Shark Valley Tower Historic Structure Report—75% Draft” (Atlanta: SERO, July 2012). A historic structure report for the Shark Valley Tower found it eligible for the National Register of Historic Places, and the tower will be included in a Mission 66 National Register nomination that is to be prepared. See Chapter 17.

High water from 1968 to 1971 forced the closure of the Shark Valley Loop Road, and considerable debris accumulated on the road. For much of this period, rangers were able to ride airboats all the way to the observation tower. The road was cleared of debris in 1971. As described in Chapter 20, the park began tram tours in 1972 and closed the road to private automobiles—although it remained open to pedestrians and bicyclists. A small housing area for park staff was developed near the start of the Loop Road. Ranger Irwin Winte lived there for a time, and the area was known as Winte’s Island. In December 1972, a three-bedroom trailer was moved to the island and became the home of an interpretive ranger. In the 1980s, the park added an employee residence on Winte’s Island and a small visitor center/office. In 1987, a \$2.7 million dollar project resulted in the elevation of the Shark Valley Loop Road above typical high water levels. The project caused a great deal of frustration for park managers. The contractor given the award for reconstruction of the road in 1986 was terminated for nonperformance, and the bidding process had to be repeated.³⁷⁰

A new 230-square-foot entrance station and a new comfort station were constructed at Shark Valley in 2009. A new visitor center/concessioner building meeting the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) standards was constructed in 2013 and dedicated in March 2014. The existing 1983 visitor center has been demolished, and the visitor parking lot has been reconfigured.³⁷¹ See Chapter 20 for the history of the interpretive program at Shark Valley.

Everglades City

Many in Collier County, notably Barron and Miles Collier, had high hopes that Everglades City would become the “western gateway” to Everglades National Park. This hope was a major factor leading the Colliers to donate 32,000 acres to the new park in the 1950s. Throughout the late 1940s and the 1950s, interests in Collier and Monroe Counties periodically started a campaign for a highway from Everglades City to Cape Sable. The more visionary thought it should continue from the cape across Florida Bay to Islamorada or Marathon in the keys. The editors of the *Key West Citizen* and the state legislators representing the keys were particularly keen on a west-coast-to-keys highway. The NPS had no interest in such a desecration of the Everglades wilderness. The service consistently conceived of Everglades City as a place for visitors to get an orientation to the park and then take a concessioner boat tour, rent a canoe or kayak, or launch a private boat. While the service was occupied with getting visitor facilities established at Royal Palm and

³⁷⁰ Dayhoff, *Chronology*; SAR, 1987.

³⁷¹ Michael Jester, personal communication, Aug. 29, 2013; “New Shark Valley Visitor Center Dedication and Sunset Tram Tour,” NPS press release, Mar. 3, 2014.

Flamingo, the Collier Corporation helped out by erecting an amphitheater facing the Barron River in Everglades City where NPS naturalists could give talks to visitors.³⁷²

The Everglades Mission 66 prospectus envisioned a district ranger station/interpretive center, employee quarters, and a boat basin at Everglades City on a twenty-acre tract. Between 1958 and 1961, the NPS built a boat basin and four employee residences on this parcel. Boat tours offered by concessioner Sammy Hamilton operated from a private dock because the NPS boat basin had no shelter or comfort station. After a number of unsuccessful attempts, the NPS persuaded Congress to appropriate funds, and a two-story ranger office/visitor contact point/comfort station building and separate maintenance building were erected in 1966–1967 at the cost of \$57,000 (figure 7–22, Everglades City ranger station and boat basin). The first floor of the visitor center was devoted to storage and concessioner facilities, with a ranger station and a small ranger station/interpretive area on the second floor.³⁷³



Figure 7–22, Everglades City ranger station and boat basin

The Everglades National Park Protection and Expansion Act of 1989 “authorized and directed” the service to construct a new visitor center in Everglades City. Congress wanted this facility to be known as the Marjory Stoneman Douglas Center “in commemoration of the vision and leadership shown by Mrs. Douglas in the protection of the Everglades and Everglades National Park.” The NPS had asked that this provision be deleted from the bill, arguing that the service had higher construction priorities and needed flexibility in locating its facilities. Congress left the language in but to date has not appropriated funds for the center. In 1994, the park renovated the visitor center, making the second floor exhibit area wheelchair accessible. After more than forty years, the facility at Everglades City is obsolete, has structural problems, and has exceeded its serviceable life. In 2012, the park began a planning process, including a value analysis, for the redevelopment of the Everglades City facility. The planning process emphasized sustainability over a fifty-year time horizon and

³⁷² Supt. Beard to Dir., Jan. 17, 1955, NARA Ph, RG 79, 79–62-A-305, box 43; SMR, Jan. 1956.

³⁷³ Everglades National Park Mission 66 Prospectus, July 15, 1955, ENP CR files; Supt. Hamilton to RDR1, Nov. 17, 1958, NARA Ph, RG 79, 79–67-A-1022; Cecil E. Drake, Mayor, Everglades City, to Dir. Hartzog, Feb. 6, 1964, NARA Ph, RG 79, 79–69-A-384; Acting Asst. Dir. Richard T. Montgomery to Sen. Holland, Mar. 5, 1964, NARA II, RG 79, NPS AF, Box 420.

adaptability to storms and sea level rise. The preferred alternative in the park's draft GMP calls for the construction of a new, modest-sized visitor center and other improvements, at an estimated cost of \$7.9 million.³⁷⁴

Key Largo

In February 1953, NPS Assistant Director Thomas Allen identified two properties at Tavernier as potential sites for the planned Florida Bay ranger station. The service soon purchased a fourteen-acre tract at milepost 98.7 of U.S. 1 on Key Largo, fronting on Florida Bay. This parcel contained a frame house built sometime in the first half of the twentieth century. The park converted the building to a ranger residence and ranger station, which was staffed beginning in April 1954 (figure 7–23, Key Largo ranger station). After 1989, the house ceased being used as a residence and has remained a ranger station. At the time of purchase, the house was located just off the highway. Versions of the master plan in the 1950s and 1960s called for a small visitor center, a nature trail, and a publicly accessible boat basin at Key Largo. To date, the park has never had the resources to develop public services at its small Key Largo property. There is an interpretive wayside and park map at the site, and it provides an office for a park outreach coordinator who conducts programs in Monroe County schools. The lawn behind the ranger station receives steady use by Monroe County emergency response agencies as a landing pad for helicopter evacuation of individuals injured in automobile accidents and other mishaps.³⁷⁵

³⁷⁴ P. L. 101–229; “Everglades National Park to Hold Open House at Newly Renovated Everglades City Visitor Center,” NPS media release, Mar. 29, 1994, EVER-1385; Statement of Robert Baker, RDSE, before the Committee on National Parks and Public Lands, House Committee on Interior and Insular Affairs, May 16, 1989; ENP, *Gulf Coast Visitor Center, Ranger Station, and Commercial Services Facility*, Dec. 2011, <http://parkplanning.nps.gov/document.cfm?parkID=374&projectID=40014&documentID=44776>; Draft GMP, 73.

³⁷⁵ Asst. Dir. Allen to RDR1, Feb. 24, 1953, NARA Ph, RG 79, 79–62-A-305, box 28; SMR, Apr. 1954; NPS Asst. Dir. A. Clark Stratton to Sam Mase of the *St. Petersburg Times*, Dec. 6, 1963, NARA Ph, RG 79, 79–68-A-636; Mance Buttram and Melissa Memory, “A Cultural Resource Assessment of the Florida Bay Interagency Science Center and Key Largo Ranger Station Site” (Homestead, FL: Everglades National Park, June 2009), EVER-1570.



Figure 7–23, Key Largo ranger station

In 1994, the NPS purchased an adjacent 3.7-acre property, the twenty-six-unit Reefcomber Motel. Built in 1961, the motel had two-single story buildings oriented perpendicular to U.S. 1 and flanking a swimming pool and patio. The service filled in the swimming pool, demolished the motel building on the south side of the pool, and moved the ranger station to a site near the west end of the north motel building. The NPS purchased the motel to serve as the centerpiece of an interagency science center, known as the Florida Bay Interagency Science Center. The motel building is used as offices and lodging for researchers. In 2010, the service erected a prefabricated concrete modular laboratory and dormitory building and a prefabricated concrete modular residence. A dock for researchers and visitor protection personnel is maintained on Florida Bay.³⁷⁶

³⁷⁶ Supt. Ring to RDSE, July 1, 1992, EVER 56572; Michael Savage, personal communication, June 26, 2013; Buttram and Memory. “A Cultural Resource Assessment.”

Chekika Recreation Area

Included in the state-owned acreage transferred to Everglades National Park as part of the East Everglades expansion was Chekika State Recreation Area, located six mile west of Krome Avenue at the end of Southwest 168th Street. The state acquired the property in 1970 from the Grossman family. Samuel Grossman, a paper-box manufacturer from Ohio, purchased considerable acreage in the East Everglades in 1917. Among this acreage was a sizable upland area that became known as Grossman's Hammock. In the 1940s, the Grossman family allowed oil exploration on the hammock. No oil was found, but drilling tapped into an artesian well producing up to 3 million gallons per day of sulfur-laden water. The Grossmans took advantage of these waters and opened the hammock to the public as Mineral Springs in 1954. They cleared a portion of the hammock and built a large artificial bathing area, Lake Chekika, and a fishing hole. At the site of the spring, they constructed a fountain and spillway structure of rough-hewn limestone. Between the early 1950s and 1970, the site was developed with roads, a campground, trails, a bathhouse, and a cabin/office sided with Dade County pine that was in use by 1957 at the latest. In spite of the rotten-egg aroma from the sulfur-containing water, the Mineral Springs proved popular with local residents.³⁷⁷

Under state ownership from 1970 to 1991, the operations at Grossman's Hammock remained largely unchanged, focusing on swimming and camping. In the first decade after taking over, the state built an entrance station, a 160-space parking area, and a boardwalk from the parking lot to the recreational area. In the 1980s, the state replaced the bathhouse with a new structure, relocated the camping area, and built a shower/restroom building. Concern over pollution of ground and surface water from the sulfur-infused well water caused the state to cap the artesian well in 1985. New shallower wells were drilled into the Biscayne Aquifer to supply Lake Chekika. The state at this time demolished and rebuilt the fountain/spillway, possibly reusing some of the stone. The state kept the cabin and used it as an office/interpretive center. The NPS has determined that the cabin is not historic because of its deteriorated condition and will be demolished (figure 7-24, cabin at Chekika, built 1950s).³⁷⁸

In 1992, the NPS opted to end swimming at the site, citing the high cost of maintenance and safety concerns. The service drained Lake Chekika and renamed the area the Chekika Day Use Area. In August 1992, Hurricane Andrew severely damaged the boardwalk and the park rebuilt it. In 1999, the NPS eliminated artificial berms, removing cattails and other unwanted vegetation and replanting with sawgrass. Hurricane Irene in fall 1999 did

³⁷⁷ Melissa Memory, Draft Cultural Resource Assessment of the Chekika Day Use Area, Nov. 2010, ENP CR files; "Chekika's Revival," *Miami Herald*, Mar. 21, 2006.

³⁷⁸ Memory, Draft Cultural Resource Assessment of the Chekika Day Use Area, 1-6.

additional damage at Chekika, and the park closed it. Staffing shortages and higher maintenance priorities elsewhere in the park prevented a quick reopening. Incoming superintendent Dan Kimball made it a priority to reopen Chekika, which is an important spot for picnics and outings by local residents. Park maintenance staff, volunteers, and college students on spring break helped to clear and restore the area. The park partnered with community groups to bring four hundred Miami-Dade residents to a preview event in April 2006 featuring free food, music, and interpretive talks. On January 6, 2007, the recreation area was reopened on a seasonal basis (December 1 to April 30) after being closed for eight years. Budget shortfalls kept the park from reopening Chekika for the winter of 2013/14 and the area remains closed as of this writing.³⁷⁹



Figure 7–24, cabin at Chekika, built 1950s

In 2004, Congress authorized the park to purchase from willing sellers up to ten acres of land in the East Everglades for administrative, housing, maintenance, or other park purposes. The property was to be outside the park boundary. In 2012, the NPS purchased a property with a house and outbuildings east of Krome Avenue and just north of 168th Street. Remodeled existing buildings and new construction at this property will constitute the park’s East Everglades Operations Center, housing ranger offices and a fire

³⁷⁹ SAR, 1999, 2007; “Park’s New Perk: Chekika is Reborn,” *Miami Herald*, Apr. 9, 2006; “Chekika Day Use Area Closed Indefinitely,” NPS news release, Dec. 11, 2013.

management station. A visitor contact station is also envisioned with wayside or kiosk exhibits. The operations center was occupied by park staff in spring 2014. A converted residence that had been used as ranger station is slated to be demolished once funding is available. An adjacent residence that was used as a dormitory was destroyed by a lightning-ignited fire.³⁸⁰

Maintenance

Once the park began to be developed with roads, trails, and buildings, this infrastructure had to be maintained. In the park's early years, the maintenance shop was co-located with park headquarters in Homestead, several miles from the main park entrance. Park maintenance staff moved into a permanent shop on Pine Island in November 1953. In 1960, a maintenance shop was added at Flamingo, and one was built at Everglades City in 1967. The park maintenance division was last reorganized in 1999 and now consists of three districts: Pine Island, Flamingo, and Gulf Coast, each with its own shop facility. There is a small shop on the Tamiami Trail, which is functionally part of the Gulf Coast District. The division also has a utilities branch, which is primarily concerned with water supply and wastewater treatment; a communications branch; and a professional services branch, which handles project management.³⁸¹

³⁸⁰ An Act to Authorize the Exchange of Land in Everglades National Park, Dec. 23, 2004, P. L. 108–483; Michael Savage, personal communication, June 28, 2013; Michael Jester, personal communication, Oct. 16, 2014; *Draft GMP*, 72.

³⁸¹ SMR, Nov. 1953; Form 10–768, building 422, Nov. 13, 1968, EVER 22965; Acting RD, SER, to Supt., EVER, transmitting Gulf Coast Development Concept Plan, Feb. 8, 1991, EVER 58222; Michael Jester, interview by author, Jan. 19, 2012; R. Bruce Gantt, personal communication, Oct. 10, 2014.

Job Corps Camp

A Job Corps camp opened in the remodeled Iori Farms complex in the park in 1965. Created by the Economic Opportunity Act of 1964 (P.L. 88-452), the Job Corps program was part of President Lyndon Johnson's War on Poverty. The program was patterned on the Civilian Conservation Corps program of the 1930s and aimed to provide vocational and academic training to disadvantaged men and women aged sixteen through twenty-one (later expanded to age twenty-four). Partly because the youths' home environments were frequently seen as detrimental, enrollees were placed in residential centers, some in urban areas and some in parks and forests where they could do conservation-oriented work. Records of the activities of Job Corps participants in the park are sparse. The Youth Conservation Corps (YCC) took over the old Iori complex in 1973, and it is likely that the Jobs Corps program had ended by then.³⁸²

³⁸² Supervisory Architect Nutt, to Chief Architect, EODC, March 24, 1965, NARA Ph, RG 79. 79-69-A-384, box 28; House Committee on Education & Labor, "The Question of the Effectiveness to Date of the Federal Job Corps Program," Report No. 866, Oct. 27, 1967.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 8:
The Water Needs of a Wetland Park: From Establishment to
Congress's Water Guarantee, 1947–1970

Chapter 8: The Water Needs of a Wetland Park: From Establishment to Congress's Water Guarantee, 1947–1970

A vast wetland ecosystem, the Everglades is vitally dependent on water. As described in Chapter 1, Everglades National Park includes roughly one-quarter of the historic Everglades Basin. In addition, the park lies at the bottom end of a water regime with origins far to the north. Over the last 5,000 years, the flora and fauna of the Everglades have adapted to a yearly cycle of a wet period (the hydroperiod) and a dry period. Historically, the water that reaches the lower Everglades from the north as sheet flow has been critical for maintaining hydroperiods. The lowering of the water level in the dry winter season (typically November to April) allows species, such as the American crocodile, to nest and concentrates fish and crustaceans in shallow pools, providing food for nesting birds. If the winter is too dry or too wet, the effects on wildlife can be severe. Another consequence of shorter than usual hydroperiods is that dead sawgrass fails to form muck to replenish Everglades soils. The salinity of Florida Bay is also affected by the amount of freshwater it receives from the Everglades. Well before the park's establishment, the state-funded construction of drainage canals, the Hoover Dike along the south shore of Lake Okeechobee, and the Tamiami Trail had affected the flow of surface water reaching the lower Everglades. NPS officials in 1947 realized that they were taking responsibility for an environment that was already compromised. They also understood that they would need the cooperation of managers of lands and waters to the north, whose decisions would largely determine how much water flowed into the park.

The Floods of 1947

The year 1947 was marked not only by the dedication of Everglades National Park but by prolonged and disastrous flooding in the region. The rains that year came early and remained heavy throughout the spring and summer. In the fall, two hurricanes struck, one on September 17 and another on October 11. Some stations in South Florida measured more than 100 inches of rain for the year. The result was widespread flooding and extensive property damage. About five million acres were inundated for up to five months. Particularly hard hit were communities established just west of the Atlantic Coastal Ridge in the Everglades, notably Hialeah, Miami Springs, and Opa-Locka. Damage was conservatively estimated at \$59 million (the 2014 equivalent of \$627 million). Human casualties were minimal because the Hoover Dike was not breached and

the managers of the Everglades Drainage District (EDD)³⁸³ flushed tremendous amounts of water to the ocean via the St. Lucie Canal and the canalized Caloosahatchee River. In the wake of the damage, farmers, ranchers, and coastal residents were as one in demanding protection from future floods. As Lamar Johnson, chief engineer of the EDD at the time, put it: “Everywhere the tom-toms were beating to prevent a recurrence of the 1947 floods.”³⁸⁴ This started a chain of events that ended in the U.S. Army Corps of Engineers undertaking an unprecedented program of flood control and water management in South Florida.³⁸⁵

Well before 1947, the EDD and the U.S. Army Corps of Engineers (the Corps) had begun to study ways to better address South Florida’s water problems. Flooding was not the only issue. Soil subsidence was a perennial problem for Everglades farmers, and dry years brought wildfires and muck fires as well as salt water intrusion into drinking water wells. Substantially more was known in the late 1940s about Everglades geology and soils than in the early twentieth century, when the state had built its drainage canals. The U.S. Geological Survey (USGS), the U.S. Soil Conservation Service, the state’s Everglades Experiment Station at Belle Glade, and the Florida Soil Science Society had compiled valuable data in the 1930s and 1940s. One key finding was that a depth of soil sufficient to grow crops was present only in a band extending about fifteen to twenty-five miles south and east of Lake Okeechobee. Farther south in the Everglades, the soils generally were too shallow to support agriculture. Following the 1947 disaster, Florida’s senators, Spessard Holland and Claude Pepper, asked the Corps to develop a comprehensive flood-control plan for South Florida. Expanding on the work already done by the EDD, the USGS, and others, the Jacksonville District of the Corps hurriedly put together a plan in the final months of 1947.³⁸⁶

³⁸³ See Chapter 1 for the origins of the Everglades Drainage District (EDD). Because land owners failed to pay the EDD’s taxes and its bond holders tied it up in litigation, the EDD had virtually ceased to function by 1931. State legislation and help from the New Deal’s Reconstruction Finance Corporation put the district back on its feet in the 1940s. By 1947, the EDD was making progress on deferred maintenance on its existing canals and planning for the future. Lamar Johnson, *Beyond the Fourth Generation* (Gainesville: University Presses of Florida, 1974), 153–55.

³⁸⁴ Johnson, 160.

³⁸⁵ Matthew C. Godfrey, *River of Interests: Water Management in South Florida and the Everglades, 1948–2000* (Jacksonville: U.S. Army Corps of Engineers, Jacksonville District, 2003), 32–33; Nelson M. Blake, *Land into Water; Water into Land* (Tallahassee: Florida State University Press, 1980), 176; Davis, *Everglades Providence*, 388; Grunwald, 218.

³⁸⁶ Luther J. Carter, *The Florida Experience: Land and Water Policy in a Growth State* (Baltimore: Johns Hopkins University Press, 1974), 89–91; Godfrey, 29–33. See Godfrey for the pioneering research on the Biscayne Aquifer and South Florida’s water regime done by USGS geologist Garald Parker.

The Central & Southern Florida Flood Control Project

The Central & Southern Florida Flood Control Project (C&SF Project) that the Corps developed was based on two main concepts: storing fresh water in order to later dispense it to various users as needed and getting rid of excess water to prevent flooding. It was the first plan that recognized the Kissimmee River watershed, Lake Okeechobee, and the Everglades as a single, interrelated hydrological system. The project had two primary goals: protecting the lower east coast from flooding and establishing an expanded agricultural area in the northern reaches of the Everglades. Secondary goals included the protection of the wildlife of Everglades National Park as well as preventing soil subsidence and the intrusion of salt water into the Everglades. The plan focused on the engineering works needed to accomplish the primary goals, but it lacked details on how the secondary goals would be accomplished. The project's aims were to be achieved by dividing the Everglades into compartments surrounded by levees and then moving water among compartments and canals (figure 8–1, The Central & Southern Florida Flood Control Plan). The engineering works planned to accomplish these goals included:

1. The construction of a 100-mile-long perimeter levee located a few miles west of the Atlantic Coastal Ridge. The levee would protect existing communities, such as Hialeah, Miami Springs, and Opa-Locka and allow for additional residential and agricultural development in East Everglades areas traditionally subject to seasonal flooding.
2. Improving the Hoover Dike and extending it to completely surround Lake Okeechobee. The lake would be the main reservoir for holding South Florida's freshwater.
3. The establishment of three water conservations areas (WCAs) covering 1,500 square miles in Palm Beach, Broward, and Dade Counties. Soils were too thin in these areas to support agriculture, and once surrounded by levees, the WCAs would be available to store water.
4. Establishment of a 700,000-acre Everglades Agricultural Area (EAA), surrounded by levees and equipped with giant pumping stations to move water into and out of it.
5. Expanding the capacity of the existing diagonal canals leading from the Everglades to the Atlantic Ocean and building new ones.
6. Installing plugs near canal outlets to better control salt water infiltration.
7. Undertaking engineering works north and west of Lake Okeechobee, notably the channelization of the Kissimmee River, allowing marshes to be reclaimed for stock grazing and other uses.³⁸⁷

³⁸⁷ Godfrey, 36–37; Carter, 92–93; Blake, 177–178; McCally, 150–53.

The first six items were planned as phase I of the project and the Kissimmee River work as phase II. The cost of the entire project was estimated at \$208 million, with the federal government covering 85 percent and state and local governments 15 percent. The Corps held public hearings on the plan and consulted with the U.S. Fish & Wildlife Service (FWS) on the plan's effects on fish and wildlife. There is no record of any Corps consultations with the NPS before the plan was released. A few details were changed as the proposal made its way from the Corps' Jacksonville district, by way of the South Atlantic Division and the Board of Engineers for Rivers and Harbors, to Chief of Engineers Raymond A. Wheeler. Wheeler then sent the proposal to Congress, recommending that \$70 million be appropriated to allow the Corps to begin phase I. Led by Senator Holland, Florida politicians and business owners orchestrated a major publicity and lobbying campaign on behalf of the C&SF Project. The EDD and Palm Beach, Broward, and Dade Counties published a *Tentative Report of Flood Damage*, better known as the "Weeping Cow" book (figure 8-2, Weeping Cow booklet). The report was filled with photographs of the devastation caused by the 1947 flooding. Its familiar name came from the dramatic cover illustration depicting a nearly inundated, crying cow beneath a lightning-filled sky. Project supporters made sure that every member of Congress and President Truman got a copy.³⁸⁸

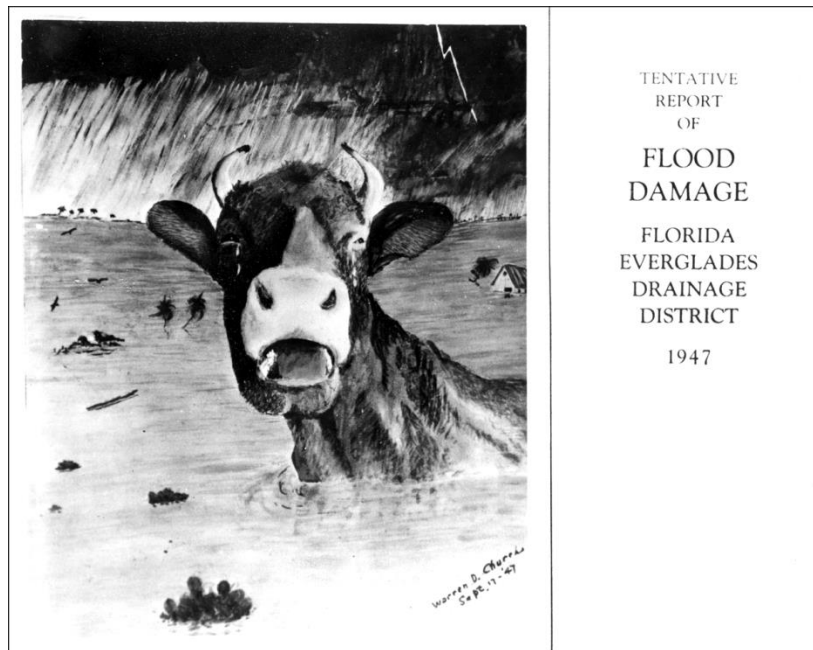


Figure 8-2, Weeping Cow booklet

³⁸⁸ Godfrey, 37-40; U.S. Army Corps of Engineers public notice, Dec. 12, 1947, K. M. Throop, EDD, to Sen. Holland, Feb. 7, 1948, SLH papers, box 178; Asst. SOI William E. Warne to Gen. R. A. Wheeler, Corps, EVER 42242; Blake, 178-179. Godfrey's *River of Interests* offers a detailed account of the relationship between the Corps and the NPS in South Florida from 1947 through 2005. The Corps commissioned this history and at times it is overly deferential to the Corps' point of view.

Reaction of the Department of the Interior to the C&SF Project

In February 1948, before the bill authorizing the C&SF Project went to Congress, the Corps sent it to the Department of Interior for comment. The project had major implications for several interior agencies: the NPS, the FWS, the Bureau of Indian Affairs, and the U.S. Geological Survey (USGS).³⁸⁹ NPS Director Newton Drury and his aides were unhappy with the short period of time allowed for review. Everglades National Park had been established just the year before, and the service had not had time to study the water needs of the park. It was obvious to the NPS and major conservation organizations that the C&SF Project would critically affect the water available to the park, but a knowledge base for intelligent comment on the project was lacking. Because of this, Drury sought to have the park's interests explicitly protected in the legislation authorizing the project. In April, he wrote the Department of Interior solicitor recommending that the bill authorizing the C&SF project include language along these lines:

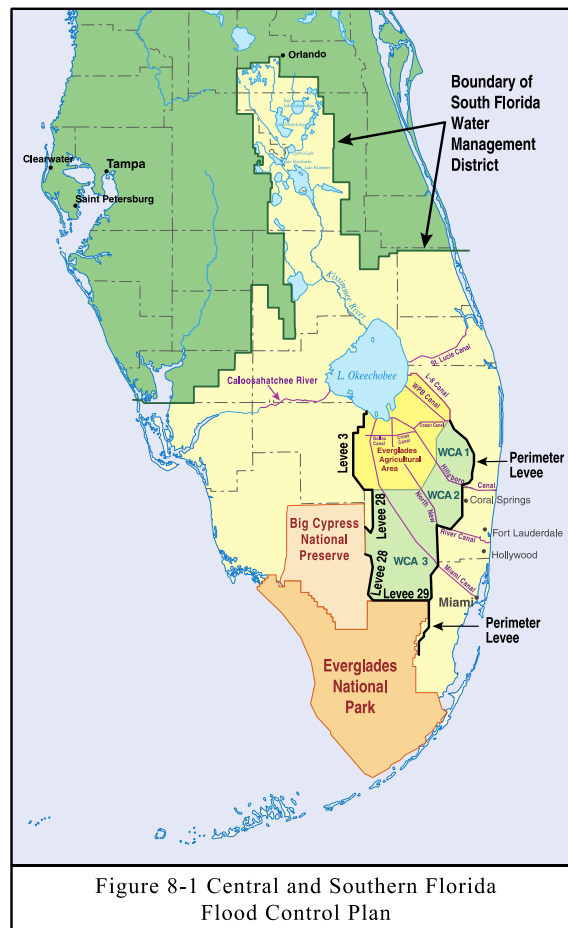


Figure 8-1 Central and Southern Florida Flood Control Plan

³⁸⁹ FWS had several wildlife preserves that would be affected by the project, and one of the water conservation areas embraced the Seminole Indian Reservation in Broward County.

*Provided, however, that no work which affects or may affect the Everglades National Park shall be undertaken on said project unless a plan of operation satisfactory to the Director of the National Park Service and the Chief of Engineers has been agreed upon.*³⁹⁰

The service approached Senator Holland about this proposed language, but Holland declined to push for its inclusion. In May, Drury withdrew his request to the solicitor, writing:

Since sending you our memorandum of April 21 we have had informal discussions with representatives of the Department of the Army and believe that any plan of flood control will be taken up with us insofar as it may affect the Everglades National Park.

Interior's official comments on the C&SF Project went to the Corps on April 13, 1948. The letter stated that the NPS "concur[s] in the general program outlined in your report and its objectives" but added that decisions affecting Everglades National Park needed to be made jointly by the service and the Corps. The Corps was reminded that the NPS "has had neither time nor resources to make studies on the actual effect of the project on the park." Interior did state that "the question is not one of too much water, but a guarantee that there shall not be too little." The NPS at this early date believed that the main effects of too little water in the dry season would be salt water intrusion and fires. Only later would the service have a clearer understanding of how the entire ecological balance in the park depended on the amount, timing, location, and quality of water deliveries. The letter closed by insisting that "it is felt imperative that plans of operation [for the project] should be the subject of negotiated agreements between the Corps of Engineers and the National Park Service *prior* to construction [emphasis added]."³⁹¹

In the Corps' response to Interior, Chief of Engineers Wheeler expressed his satisfaction with the department's concurrence in the C&SF Project and promised that the DOI's comments would be sent to Congress along with the project plan to become part of the official record. Wheeler agreed that it was "essential" that "there be close cooperation and negotiations between the Corps of Engineers and the National Park Service in devising plans and operating procedures which would affect the Everglades National Park." He stopped short, however, of any commitment that the Corps would reach agreement with the NPS *prior* to the construction of any of the project's works, as had been requested by the DOI.³⁹²

³⁹⁰ Dir. to the DOI Solicitor, Apr. 21, 1948, EVER 42242.

³⁹¹ Asst. SOI William E. Warne to Gen. R. A. Wheeler, Corps, EVER 42242.

³⁹² Gen. R. A. Wheeler, Chief of Engineers, Corps, to the SOI, May 21, 1948, EVER 42242.

In retrospect, it is evident that the entire history of the conflicts between the Corps and the NPS over the operations of the C&SF Project is foreshadowed in this correspondence from early 1948. If Director Drury had succeeded in getting language protecting the park into the project's authorizing legislation, that history might have been quite different. The project, however, was overwhelmingly motivated by the desire to prevent floods in the expanding communities along the Atlantic Coast and to benefit agriculture. In addition, the Truman administration had a decidedly utilitarian conception of the conservation of natural resources; bluntly stated, it favored people over birds. In early 1948, there was no real possibility that Everglades National Park would be singled out among all the beneficiaries of the C&SF Project for special consideration in the authorizing legislation. The NPS had to settle for the informal, nonbinding assurances of cooperation offered by the Corps.

The Subcommittee on Flood Control and Improvement of Rivers and Harbors of the Senate Committee on Public Works held hearings on the C&SF Project from May 12 through 14, 1948. Florida's congressional delegation did its best to ensure that only strong supporters of the project appeared. Testimony at the hearings emphasized the project's benefits for agriculture and the need to avoid a repeat of the 1947 floods. No NPS officials and no representatives of national conservation organizations testified. John Baker, president of the National Audubon Society, had hoped to testify, but was unable to appear. He did send several letters and telegrams, both to the subcommittee and the Corps, expressing concern that the project overemphasized flood protection and gave insufficient attention to storing water for release in times of drought. Baker believed that the maintenance of high water levels in Lake Okeechobee was critical. He thought that water stored in the lake could be released during drought periods, thus providing sufficient water to allow the formation of bird rookeries within Everglades National Park. Devereux Butcher, executive secretary of the National Parks Association (NPA), visited South Florida in the winter of 1947/48 and attended the Corps' hearings on the C&SF Project.³⁹³ In April 1948, Butcher told the NPA's executive committee:

[T]he greatest danger to the park lies in the fantastic plan of the Army Engineers to control floods in South Florida. . . . The effect that this control of the natural flowage of water might have upon wildlife and plant life within the park cannot be determined now, but it could conceivably do irreparable harm.³⁹⁴

Less than a year later, the Izaak Walton League of America noted that the project had "potential . . . to raise [C]ain in the national park," without offering any further detail. It is apparent that some conservationists from the beginning were troubled by the

³⁹³ Godfrey, 41; John H. Baker, NAS, to Col. F. A. Feringa, Corps, May 10, 1948, SLH papers, box 148; "The President Reports to You," *Audubon* 50/2 (Mar.–Apr. 1948):121.

³⁹⁴ NPA Executive Committee Meeting Minutes, Apr. 28, 1948, NPCA papers, series 1, box 13.

implications of the project. No one at the time, however, understood exactly how the project would affect the park, making it impossible for skeptics to go much beyond general statements of concern.³⁹⁵

Several historians have pointed to the near-universal support, especially in Florida, for the C&SF Project. At the onset, Marjory Stoneman Douglas believed the project “would produce substantial benefits from the preservation of fish and wildlife resources.”³⁹⁶ Several large land owners—the Collier Corporation, rancher John Lykes, and dairyman Ernest Graham—did oppose the plan. The Collier Corporation stated that it could not back the plan because it had not received enough information on area hydrology and the details of the engineering works contemplated. Concern over the taxes that would be levied to pay for the works probably was the most important factor in landowner opposition.³⁹⁷ One vocal critic of the project was Edwin C. Menninger, publisher of the *Stuart Daily News*. The huge volumes of water sent down the St. Lucie Canal in 1947 had devastated coastal waters, turning them into a “muddy disaster” and ruining sportfishing. Menninger exhorted Senator Holland:

Some hard-shelled conservationist needs to arise in Congress and awake his associates to the fact that we are not interested in getting rid of the water. The engineers think only in terms of ditches. The greatest service you could render Florida would be to organize a comprehensive program to preserve, impound, and treasure the water, as it is our lifeblood. The longer I live here, the more I am impressed with the necessity of stopping this infernal ditch-digging.³⁹⁸

The C&SF Project was included in the Flood Control Act of 1948, signed by President Truman on June 30, 1948. The act authorized \$70 million for phase I and appropriated \$16.3 million, to become available as soon as state and local authorities had provided their share, amounting to \$3.7 million. The Corps could not immediately begin the project because the Florida legislature was not due to convene until April 1949. The 1949 session of the legislature enacted three laws that permitted the project to go forward. One measure provided for the elimination of the EDD once its debts had been paid. A second law established the Central and Southern Florida Flood Control District (FCD), which was to take over the responsibilities of the EDD and the old Okeechobee Flood Control

³⁹⁵ Izaak Walton League, “Crisis Spots in Conservation,” Mar. 1, 1949, IWL papers.

³⁹⁶ Marjory Stoneman Douglas, “What Are They Doing to the Everglades,” c. 1948, cited by Grunwald, 224. Douglas’s first written criticism of the C&SF Project came in 1959, see Davis, *Everglades Providence*, 439.

³⁹⁷ Sam C. Collier, Collier Corporation, to Sen. Holland, May 11, 1948, SLH papers, box 178; McCally, 150; Blake, 176.

³⁹⁸ Edwin C. Menninger to Sen. Holland, Mar. 16, 1948, SLH papers, box 178.

District.³⁹⁹ The FCD embraced more than 15,000 square miles extending from Brevard County to Dade County. Finally the legislature appropriated \$3.25 million, representing the state's initial contribution to construction costs for the C&SF Project. This was the first time the state had allocated any portion of its general revenues to a flood-control project. The only point of contention in the legislature was how to apportion the FCD taxes that would underwrite the local share of construction costs. If taxes were apportioned according to the benefits expected from the project, agricultural interests in the upper Everglades would bear most of the cost. If apportionment was based on property values (the ad valorem basis), urban residents along the coast would pay more than 90 percent of the taxes. At that time, rural interests dominated the Florida legislature, and the ad valorem basis was adopted. This fateful decision ensured that agriculture's water needs would be subsidized by urban land owners, a situation that remains unchanged.⁴⁰⁰

Implementing the Flood Control Project

The Corps and the FCD shared responsibility for completing and operating the C&SF Project. The Corps designed and built the works, while the FCD was responsible for data collection, land acquisition, and most of the liaison work with local communities. As portions of the system came on line, the FCD was to have day-to-day operating responsibilities. In times of high water and potential flooding, though, the Corps would make final decisions on water releases. A five-member board of directors appointed by the governor oversaw the operations of the FCD. The district established its headquarters at West Palm Beach and named W. Turner Wallis as chief engineer. Wallis's associate, Lamar Johnson, came on as an assistant engineer. Both men had experience in the Everglades dating to the state's drainage work of the 1920s.⁴⁰¹

Construction on the project proceeded slowly for several reasons. The original plan had been speedily put together in a few months in 1947. The plan could not be effectively implemented without substantial additional study, and minor modifications had to be made as new data became available.⁴⁰² In addition, Congress was often tardy in appropriating funds for construction. Work on the perimeter levee to protect urban areas

³⁹⁹ Florida had created the Okeechobee Flood Control District in 1929 because it was not clear that the EDD had authority to undertake flood control, as opposed to drainage, works. Blake, 145.

⁴⁰⁰ Godfrey, 41, 47–48; Blake, 181.

⁴⁰¹ Godfrey, 41, 49–51; "Flood Board to Organize on Tuesday," *Florida Times-Union*, July 10, 1949; "Florida and National Park Service at Loggerheads Over Water," *New York Times*, May 9, 1967; Godfrey, 41, 47–48; Blake, 181. Governor Fuller Warren appointed Dave Turner, Fred Bartleson, Joe S. Earman, N. J. Hayes, and Lawrence Rogers. The board named Turner as executive director. Lamar Johnson's *Beyond the Fourth Generation* provides a fascinating first-hand account of the operations of the EDD and the FCD.

⁴⁰² Changes included reducing the size of the WCAs from 1,500 to 1,300 square miles and shifting the location of some levees; they did not alter the basic plan of the project.

along the Atlantic Coast began in January 1950, was about 75 percent complete by 1960, and was largely finished by 1963. The levees surrounding the EAA were completed in 1960. Work on WCA 1 was completed by 1959, but work on WCAs 2 and 3 was not completed until late 1962. Park Superintendent Warren Hamilton participated in the official dedication of WCA 3 by breaking a bottle filled with water from Lake Okeechobee on a spillway structure. Even when the levees around the WCAs were finished, it took years for the water in them to reach target levels. The FWS agreed to manage WCA 1 as the Loxahatchee National Wildlife Refuge.⁴⁰³ The Florida Game and Fresh Water Fish Commission took on a similar role, managing WCAs 2 and 3 as the Everglades Wildlife Management Area. In 1954, Congress authorized phase II of the project, and the work of channelizing the Kissimmee River and draining its marshes was conducted from 1962 to 1971. At a cost of \$35 million, the project converted a ninety-two-mile-long river that meandered through wetlands into an arrow-straight fifty-two-mile canal, designated C-38. Five dams with locks impounded water in shallow pools. An estimated 30,000 acres of wetland were drained.⁴⁰⁴

The major components of the C&SF Project were in place by the mid-1960s, essentially turning the Everglades into a managed hydrological system. Four large sealed compartments—the EAA and the three WCAs—now lay between Lake Okeechobee and Everglades National Park (see figure 8–1). Levee L-29, along the southern boundary of WCA 3, formed a twenty-mile barrier across the upper portion of the Shark River Slough. The borrow canal for the levee, the L-29 Canal, ran between the levee and the Tamiami Trail. In the late 1960s, the Corps built two diagonal levees (L-67A and L-67C) that divided WCA 3A to the west from WCA 3B to the east. This was done to isolate the northwestern portion of the area (WCA 3A) from the southeastern portion (WCA 3B) because of high rates of seepage in the latter. The result was that less water was available in WCA 3B, which fed the Northeast Shark Slough. From the forty-mile bend in the Tamiami Trail to a point eleven miles to the east, four gated spillways (S12-A, S12-B, S12-C, and S12-D) allowed water to be released from the L-29 Canal into the park, at the discretion of the FCD and the Corps (figure 8–3, one of the S-12 water control gates). From water control structure S12-D east to Krome Avenue, some fifty culverts running under the Tamiami Trail allowed water from the L-29 Canal to flow into the northeast Shark Slough, *if* the water level in the canal was high enough. Before the construction of L-29, surface water flows from the north had been fairly evenly distributed among culverts under the old Tamiami Trail. Now, water flows into the lower Everglades Basin would come almost entirely at a few point sources (the S-12s), all in the *northwestern* portion of Shark Slough. At the request of the NPS, the Corps between 1966 and 1968 built the L-67 extension, a ten-mile-long canal running south from the S-12D along what

⁴⁰³ Renamed the Arthur R. Marshall Loxahatchee Wildlife Refuge in 1988.

⁴⁰⁴ Blake, 181–84; Godfrey, 53–55, 141.

then was the eastern park boundary (figure 8–4, water control structures affecting Everglades National Park). The L-67 was meant to separate the park from private land to the east and enhance water flows into the northeast Shark Slough.⁴⁰⁵



Figure 8–3, one of the S-12 water control gates

The east coast perimeter levee south of the Tamiami Trail was the L-31N; its primary purpose was to protect agricultural and residential areas in southern Dade County from flooding (figure 8–1). Between the park’s eastern boundary (as it existed in the 1960s) and the L-31N lay an area of about 150,000 acres sometimes known as the East Everglades. Much of this acreage flooded seasonally. Although the planned location of the east coast perimeter levee was widely known, a few people in the 1960s built homes and plant nurseries west of the levee. The East Everglades area also formed the headwaters of Taylor Slough, which runs from near Royal Palm Hammock to Florida Bay. The Corps’ plan for south Dade County went through several changes before being implemented. As first conceived, the perimeter levee was to run south to the coastal area. This was soon changed in favor of a network of drainage canals (the C-111, etc.), meant to drain excess water to Florida Bay, Barnes Sound, Card Sound, and Biscayne Bay. The NPS objected to aspects of this plan because it would direct all the run-off to the east, depriving Taylor Slough of needed water. The Corps responded by modifying the project to include Canal L-31W. This canal jogged west from the L-31N and ran along the

⁴⁰⁵ U.S. Army Corps of Engineers, *Central and Southern Florida Project, Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement* (Jacksonville: Corps, Apr. 1999), J-243–244, http://www.evergladesplan.org/docs/comp_plan_apr99/summary.pdf. Cited hereafter as *C&SF Comp. Rev. Study*.

eastern boundary of the park, potentially allowing water to be routed into Taylor Slough. Moving the perimeter levee to the west also potentially freed up more land for agriculture. Two gated culverts, S-174 and S-175, were placed in the L-31W Canal. Later a pump, S-332, was constructed as an additional means of moving water. The Corps and the park also compromised on the route of Canal C-111, placing the last few miles on a NW/SE diagonal.



As originally designed and constructed, the L-31, the C-111, and related canals in southwest Dade had no surface water connection to the L-29 Canal along the southern boundary of WCA 3. The southern Dade canal system was originally meant as a drainage system only; it had no water storage function. As described below, later changes connected the parts of the system.

Canal C-111 and Aerojet

One of the six canals planned to drain southwest Dade County was the C-111, running seven miles from just south of Homestead to Barnes Sound (figure 8–4). In 1962, the Aerojet-General Corporation, a subsidiary of General Tire Corporation, purchased 25,000 acres and took options on another 50,000 acres southwest of Homestead. Aerojet was a leader in solid-fuel rocket engines and hoped to become an integral part of the National Aeronautics and Space Administration’s (NASA’s) effort to place a man on the moon. The company spent \$5 million (\$39 million in 2014 dollars) building a complex for researching, testing, manufacturing, and shipping rocket engines on its Dade County property. The tract was adjacent to the eastern boundary of the park, and Canal C-111 was planned to run through it. Canal C-111 was made large enough—twenty-eight feet wide and nine feet deep—to accommodate barges carrying twenty-five-foot-diameter rocket engines. This would allow the engines to be shipped down the C-111 to Barnes Sound and then all the way up the intracoastal waterway to the NASA launch site at Cape Canaveral. In 1967, Aerojet exercised one of its options and purchased 25,000 acres, bringing its total ownership to 50,000 acres.⁴⁰⁶

A facility one mile from the park that tested engines throwing plumes of smoke and particulate matter 1,000 feet into the air was naturally of concern to park managers. The effects of blasts on wildlife and possible air and water pollution were unpredictable, as were the effects on the water regime of such a deep canal. Superintendent Stanley Joseph attended the dedication of the Aerojet facility in May 1964, and the first test of a 260-inch diameter engine took place September 25, 1965. That test and a second test on February 23, 1966, apparently caused no harm on nearby properties. A third test of a more powerful engine on June 17, 1967, was a different story. Hydrochloric acid from the engine’s exhaust caused leaf spotting on avocados, limes, and mangos and damaged paint and chrome on automobiles. When NASA decided to use only liquid-fuel rockets, Aerojet tested no more large rockets and eventually stopped using the facility. Had NASA made a different decision, the Aerojet facility would likely have been a serious problem for Everglades National Park. In 1980, the Trust for Public Land (TPL) purchased 17,820 acres from Aerojet for \$17 million dollars and received the remaining 32,180 acres as a donation. The state purchased the 50,000-acre tract from TPL in 1983. It is now owned by the South Florida Water Management District and managed to support Everglades restoration objectives.⁴⁰⁷

⁴⁰⁶ “Aerojet Acquires Options in Florida,” *New York Times*, Sept. 23, 1961; Asst. Dir. to Supt., ENP, Feb. 27, 1962, Asst. Dir. Tolson to RDR1, Mar. 20, 1962, NARA Ph, RG 79, 79–70-A-4751, box 53; Godfrey, 82; *Aerojet-Dade: An Unfinished Journey*, directed by Doug La Rue, 2008, <http://www.youtube.com/watch?v=o4BkDQjM2Jc>.

⁴⁰⁷ SMR, May 1964; La Rue, *Aerojet-Dade: An Unfinished Journey*; “Florida Buys Aerojet Glades Tract,” *Miami Herald*, Dec. 17, 1983.

Salt water intrusion from Barnes Sound to the park via C-111 was another park concern. In constructing the canal, the Corps had built a temporary dam to carry U.S. 1 over the route of the canal. With C-111 nearing completion in spring 1967, the Corps announced its intention to remove the dam and replace it with a bridge. This move would have left no barrier to prevent salt water from flowing up the canal. Park managers and conservationists insisted that a gated barrier be installed near the canal's outlet to prevent salt water intrusion, and secondarily to retain water that potentially could be diverted into Taylor Slough during times of high water. The Corps and the FCD balked at the cost of such a water-control structure. The National Audubon Society and some local farmers and fishermen brought a suit in federal court against the Corps in March 1967. After further study and discussions with the NPS, the Corps agreed to install a barrier, which was completed in December 1968. At first, this was an earthen dike. In times of high water, the Corps bulldozed the barrier to flush water to tide, and then built it anew when the emergency was over. Later the Corps installed a gated culvert structure, known as S-197.⁴⁰⁸

The Cape Sable Canals

A water issue unrelated to the C&SF Project arose in the southwest corner of the park. Settlers in the Cape Sable/Flamingo area in the 1910s and 1920s dug several canals in an attempt to drain the Cape Sable prairies for agriculture and stock raising. As related in chapter 1, these canals instead ruined the area for agriculture by saturating the land with salt water. Two of the canals, the Middle and East Cape Canals, connected Lake Ingraham with the ocean. The Homestead Canal, built in conjunction with the Ingraham Highway, extended to Lake Ingraham. The effect of building the canals and connecting inland waterways with the Gulf of Mexico was to allow salt water at times to flow all the way up the Homestead Canal to the vicinity of Royal Palm Hammock. Initially sixteen feet wide, the canals at Cape Sable were gradually widened by tidal action. The influx of seawater converted Lake Ingraham from a fresh-to-brackish regime to a decidedly marine environment. In addition, the action of tides via the canals led to considerable erosion of the canal banks. In the 1950s and 1960s, the park installed earthen dams in the Homestead and East Cape Sable Canals, but these failed. Repairs were made to both dams in 1984 and to the East Cape Sable Canal in 1991. Failures continued to occur, and in 1997, the park installed sheet-piling dams, which also failed. The park received \$12 million in funding from the American Reinvestment and Recovery Act of 2009 to plug two of the canals, the East Cape Canal and the Homestead Canal. Following an

⁴⁰⁸ “Water—Fresh or Salt—Sets Off Dispute in Everglades National Park,” *New York Times*, Mar. 19, 1967; *National Audubon Society, et al. v. Stanley N. Resor, SOA, et al.*, Civil No. 67-272, U.S. District Court, So. District of Florida; DOI press release, “Federal Agencies and Florida Announce Details of a Plan for Canal-111 Problem Affecting Water Supply to Everglades National Park,” EVER 42242.

engineering study and an environmental assessment, the project was completed in 2010 and 2011, but problems have already emerged with the new plugs.⁴⁰⁹

Controversy over Water Deliveries to the National Park

Cooperation among the Corps, the FCD, and the NPS was slow to develop. In the early years, park managers were largely preoccupied with effectively patrolling and developing the new park for visitation. They lacked the time and the expertise needed to closely examine the evolving C&SF Project. A general sense of unease over how the project would affect the park prevailed within the service. In August 1949, NPS Regional Director Thomas Allen pressed the Corps for more details on the C&SF Project, requesting that the NPS be given the opportunity to suggest changes to any engineering works before they were built. He also asked the Corps to undertake studies to determine how much water the park should receive to replicate both conditions existing in 1947 and conditions existing before any drainage had been accomplished in the Everglades.⁴¹⁰ The question of who had the responsibility for calculating the park's water requirements emerged as the first major area of conflict between the park and the Corps and its local partner, the FCD.

As early as June 1950, the Corps was informing the NPS:

Special investigations and studies related to the detailed determinations of requirements of local interests for water supply or other purposes . . . are not considered to be within the responsibilities or authorized functions of the Corps of Engineers. . . . Everglades National Park will compete with agricultural areas and urban centers for water supply.⁴¹¹

The Corps was not only declining to study the park's water needs but branding the park, set aside by Congress as important to the nation as a whole, a "local interest." Regional Director Allen responded by repeating the service's view that the Corps had responsibility for determining the park's water needs. He added that preliminary calculations indicated that the park's minimal need was for 300,000 acre-feet of water

⁴⁰⁹ Gary E. Davis, "A Review of the Man-Made Canals in the Cape Sable Region of ENP, FL," June 1972, Buttram, Trebellas, Memory, and Ogden, 74–76, EVER 42242; "Everglades National Park's American Reinvestment and Recovery Act Cape Sable Canals Dam Restoration Project Moves to the Next Step!" NPS media release, Aug. 18, 2009; Buttram, Trebellas, Memory, and Ogden, 69; Melissa Memory, personal communication, June 26, 2013.

⁴¹⁰ RDR1 Allen to District Engineer, Jacksonville District, Corps, Aug. 5, 1949, NARA II, RG 79, NPS Dir. Recs., Drury, box 7; RDR1 Allen to District Engineer, Jacksonville District, Corps, Mar. 7, 1951, EVER 42242; Supt. Warren to RDSE, Dec. 20, 1962, NARA Ph, RG 79, 79–70-A-4751, box 55.

⁴¹¹ Col. R. W. Pearson, District Engineer, to RDR1, June 30, 1950, cited in Godfrey, 58–59.

annually.⁴¹² This figure came from a study of the park's hydrology undertaken by FCD engineer Lamar Johnson. Johnson had long been curious about the park's water needs and got permission from the FCD board to study the question on his own time. His May 1950 report noted that a lack of data from the era before drainage made it impossible to calculate historical water flow with any precision. Relying on descriptions of the region before drainage and more recent rainfall and evaporation data, Johnson produced some estimates. He estimated that before drainage, the area of the park received as sheet flow from north of the Tamiami Trail, "2,315,000 acre-feet in an average year; 10,744,000 acre-feet in a wet year; and negligible runoff . . . during a dry year." He concluded that if the park could get an annual minimum of 300,000 acre-feet from the C&SF Project, the prior ecological balance in the park could be restored "at least to a reasonable degree." He also recommended that, to get the maximum benefit from the water it did receive, the NPS erect a system of low dikes at six mile intervals within the park. The dikes would be gated, with gates opened or closed as needed to retain fresh water and block salt water intrusion. Johnson acknowledged that NPS officials did not favor artificial water control structures within national parks. The NPS regarded Johnson's estimates of water requirements as preliminary, subject to revision following additional study.⁴¹³

In an exchange of letters, NPS Director Drury and National Audubon Society President John Baker indicated their unhappiness with aspects of Johnson's report. The study gave the NPS its first estimate of park water needs, but it emphasized that the C&SF Project would be operated primarily for the benefit of agriculture and coastal residents. Drury noted that the erection of water-control structures within the park was contrary to NPS policy and could not be considered. The director understood, however, that water deliveries to the park "will depend on developments and water uses outside the park by agencies over which we have no control" and that "moral suasion" was the only tool he possessed in dealing with the Corps and the FCD.⁴¹⁴

Throughout the 1950s, park managers did what they could with very limited resources to better understand regional hydrology and the park's water requirements. The USGS had maintained water gauging stations in the Everglades region since 1940. Beginning in the winter of 1952/53, the NPS entered into a cooperative agreement with the Corps and the USGS for five additional stations within the park.⁴¹⁵ Nonetheless, the park had difficulty

⁴¹² An acre-foot is a measure of volume equal to the amount of water needed to cover an acre of land to the depth of one foot.

⁴¹³ Engineering Dept., C&SF FCD, "A Report on Water Resources of Everglades National Park, Florida," May 22, 1950; Johnson, *Beyond the Fourth Generation*, 209. 300,000 acre-feet amounted to only about one-seventh of Johnson's calculated average predrainage yearly flow; it is unclear why he believed such a small amount would be adequate.

⁴¹⁴ Dir. Drury to John H. Baker, NAS, Jan. 24, 1951; John H. Baker to Dir. Drury, Jan. 29, 1951, Dir. Drury to John H. Baker, Jan. 30, 1951, NARA II, RG 79, NPS Dir. Recs., Drury, box 7.

⁴¹⁵ The system of gauging stations continued to be expanded and modernized over the years.

freeing staff from other duties to maintain the stations and analyze data from them. In late 1957, Superintendent Beard lamented that the NPS could not give the Corps a more precise idea of its water needs. He observed, “as of now we can only parrot our old line about wanting more water, but not too much. Unless we can get into a position to give more definite answers within the next year or so we’re likely to lose out.” In its early years, the park had to rely on civil engineers and other experts from the NPS regional office or the Washington office to review and comment on Corps construction and operating plans. The park hired its first hydraulic engineer, Frank Nix, in 1963, giving it in-house expertise for the first time. The park’s early research efforts focused not on the region’s hydrology, but on fish populations in Florida Bay (see Chapter 11). In 1957, NPS Region 1 suggested that “the problem of ground water flow from the north” was a high priority for research, but it was too late to reallocate money already committed to fisheries studies.⁴¹⁶

In 1958, the NPS hired Lamar Johnson, now an independent consultant, to make a new study of park water needs. His report largely repeated the conclusions and recommendations of his earlier 1950 report. Based on the 1958 study, Superintendent Warren Hamilton communicated an estimate of the park’s needs to the Corps’ Jacksonville office:

[I]t appears the optimum Park water requirements should be two or more million acre-feet [annually] with at least 150,000 acre-feet per month coming into the Shark River slough area during the spring season.

These requirements were stated tentatively, subject to future revisions. NPS efforts to estimate park water needs were hamstrung by a lack of research on the effects of the altered water regime on the ecological relationships within the park. As described in Chapter 11, NPS funding for scientific research was woefully inadequate throughout the 1960s.⁴¹⁷

NPS concerns over the amount, location, and timing of water deliveries rose to the highest level of the Department of the Interior in 1961. Secretary Stewart L. Udall wrote Secretary of the Army Elvis J. Stahr Jr. requesting his assistance in concluding a formal agreement among the NPS, the Corps, and the FCD “to insure that future park [water] needs are reasonably assured.” Stahr responded that the Corps had no authority to guarantee a water supply to any user and that the NPS should seek any desired guarantees from the FCD. An October 1961 meeting in Washington attended by NPS, Corps, and FCD officials brought the parties no closer to agreement. The Corps maintained its stance, and the FCD stated that it could not enter into an agreement with the NPS until it

⁴¹⁶ Supt. Beard to RDR1, June 4, 1953; Supt. Beard to RDR1, Nov. 26, 1957, NARA Ph, RG 79, 79-67-A-1022, box 52; Acting RDR1 to Dir., July 16, 1957, NARA Ph, RG 79, 79-68-A-2955, box 48.

⁴¹⁷ Lamar Johnson, “A Survey of the Water Resources of Everglades National Park,” July 1958; Supt. Hamilton to Col. Paul D. Troxler, Corps, Jacksonville District, Dec. 29, 1958, NARA Ph, RG 79, 79-67-A-1022, box 68.

had a more comprehensive understanding of the water needs of both the park and coastal communities. The NPS then persuaded the Congress to request that the Corps conduct a survey and review of possible modifications to the C&SF Project “to provide for the supply, distribution, and conservation of water for or on the Everglades National Park, Florida.”⁴¹⁸ At the suggestion of the Corps, a coordinating committee was established to address water issues in South Florida and help guide the review study. This committee had field-level representatives from federal, state, and local agencies.⁴¹⁹

Drought Brings National Attention to Everglades National Park’s Water Issues

Before the Corps could begin developing the scope of work for the requested study, a severe drought in South Florida brought national attention to the park’s water situation. Much of the Everglades region received only about half of its normal rainfall in 1961. By spring 1962, park managers could maintain some water in the ponds along the Anhinga Trail only by pumping from an underground well. Staff pumped water into and dredged the ponds from time to time in subsequent years to maintain some wildlife habitat. These actions were only stopgaps and did not come close to replicating predrainage water levels. Park staff also placed explosives in the underlying limestone to blast out alligator holes that could collect water and shelter wildlife (figure 8–5, pumping from a well at the Anhinga Trail; figure 8–6, blasting a gator hole). (See Chapter 12 for more detail on the artificial water holes.) Drought conditions persisted until 1966 and led to repeated accusations that the FCD and Corps were denying needed water to the park. A particular sore point was the fact that the gates in the S12 structures in L-29 along the park’s northern boundary remained shut, except for two brief periods, from 1963 into 1965. Then, in April 1965, the Corps permitted 70,000 acre-feet of water to be flushed via canals from Lake Okeechobee to the sea, ostensibly to lower the lake level in advance of hurricane season. The NPS protested bitterly; additionally, it was not happy with the slow pace of the Corps’ review study of the park’s water needs. The NPS also believed that the study process was putting more emphasis on adding engineering structures rather than operating the system to get more water to the park.⁴²⁰

⁴¹⁸ At the request of the FCD, the Senate committee passed a second resolution on June 5, 1963, directing that the study explore the possibility of erecting a barrier to retain fresh water in “the southwest area of the Everglades National Park.” The Corps and the FCD repeatedly proposed such barriers, but the NPS never agreed to them. Acting NPS Dir. to SOI, Apr. 7, 1964, NARA II, RG 48, DOI, CCF, box 206. The committee added a third resolution adopted Jan. 11, 1965, asking that the study address “water supply and water control for the Lake Okeechobee-Everglades agricultural area.”

⁴¹⁹ SOI Udall to SOA Stahr, July 18, 1961, NARA Ph, RG 79, 79–67-A-1022, box 69; SOA Stahr to SOI Udall, Sept. 7, 1961, EVER 308019, box 23; Resolution of the Senate Committee on Public Works, May 4, 1962; Godfrey, 75.

⁴²⁰ Godfrey, 76–77; Dir. Hartzog to Maj. Gen. Jackson Graham, Corps, Apr. 30, 1965, NARA Ph, RG 79, 79–68-A-636, box 5; SMR, Feb., May, June, 1962, May 1965, Mar. 1967; John O’Reilly, “Water Wanted for a Parched Park,” *Sports Illustrated*, June 7, 1965; Richard W. Klukas, Management Biologist, “Dredging of Aquatic Survival Areas,” Oct. 15, 1971, EVER 22965.



Figure 8-5, pumping from a well at the Anhinga Trail



Figure 8-6, blasting a gator hole

With the Corps moving at a snail's pace, the NPS relied on two studies to establish the park's desired "interim supply" of water. Based on a 1961 NPS water resources division study and a 1963 USGS study, the park arrived at 315,000 acre-feet per year as a minimum water flow into the park.⁴²¹ The NPS stressed that the figure was an interim,

⁴²¹ The Tamiami Trail originally had open culverts at one-mile intervals that allowed some water to flow from north to south, although not as much as flowed before the road was built.

minimum water supply, subject to revision when additional data were available to establish “water needs for ecological maintenance of the park.” While the Corps pursued its review study, it and the FCD worked with the NPS on an interim plan to augment water supplies to the park. Protracted negotiations took place throughout most of 1965, and the plan went into operation in March 1966. The Corps and FCD agreed to pump excess water from Lake Okeechobee into the WCAs whenever it could, build or improve canals and pumps within WCA 3 to facilitate the southward flow of water toward the park, and enlarge and extend canals along the eastern park boundary, which potentially could channel more water to the headwaters of Taylor Slough. All parties understood that these were interim measures only.⁴²²

In the meantime, an avalanche of negative publicity kept up the pressure on the Corps and the FCD.⁴²³ Some observers noted that Florida governors consistently placed agricultural industry representatives on the district’s board. *St. Petersburg Times* outdoors columnist Red Marston pointedly asked, “Who speaks for the national park on the five-man FCD governing board?” High-water conditions in WCA 3 in spring and summer 1966 led to the widespread drowning of deer, drawing protests from sportsmen’s groups and animal lovers. By contrast, 1967 was a year of low water, and drought in the park resulted in more bad press. Perhaps the most influential piece to appear was by noted author and conservationist Wallace Stegner, “Last Chance for the Everglades,” which ran in the May 6, 1967 issue of *Saturday Review*.⁴²⁴

⁴²² Dir. Hartzog to SOI, Sept. 9, 1964, transmitting “Position Paper: Water Problem, Everglades National Park,” DOI-DOA Joint Fact Sheet on Water Situation at Everglades National Park, Feb. 16, 1966, NARA Ph, RG 79, 79-70-A-4751, box 54; Blake, 188-190, Godfrey, 78-79.

⁴²³ For example, “Everglades National Park A Study in Tragedy as Man Hoards Its Water,” *Daytona Beach News-Journal*, May 23, 1965; “Trouble Brewing in the Everglades,” *Philadelphia Bulletin*, June 13, 1965; Editorial “Everglades in Danger,” *New York Times*, July 12, 1965; Michael Straight, “The Water Situation in Everglades National Park,” *National Parks Magazine*, 39/215 (August 1965). The chair of the FCD complained of the unfair treatment given his agency on the CBS Evening News of July 29, 1966, Riley S. Miles to Walter Conkrite, CBS, Aug. 4, 1966, SLH papers, box 532.

⁴²⁴ Godfrey, 83; Red Marston, “Mother Nature or Engineers’ Blame in the ‘Glades,” *St. Petersburg Times*, June 2, 1965.

The Corps shared its draft review study on South Florida water needs and its recommended modifications of the C&SF Project with the NPS and the state in July 1967. After comments from the DOI, the state, and the public, the final draft appeared in May 1968. In it, the Corps accepted as a goal the delivery of 315,000 acre-feet of water per year to the park but declined to provide a guarantee of this minimum. By this point, the NPS had broken down the overall minimum figure as follows:

- 260,000 acre-feet to Shark Slough via the S-12 structures;
- 38,000 acre-feet to eastern Shark Slough and the headwaters of Taylor Slough;
and
- 17,000 acre-feet to Taylor Slough in the panhandle area (where the park boundary jogs east to U.S. 1).

Delivery of the last two amounts could not be accomplished until the Corps had built new structures in south Dade County. Additionally, the service established a monthly schedule for water releases, outlined in the following table.⁴²⁵

Month	Release in Acre-Feet
January	27,000
February	11,000
March	5,000
April	2,000
May	2,000
June	6,000
July	9,000
August	15,000
September	47,000
October	81,000
November	71,000
December	39,000

⁴²⁵ NPS Deputy Dir. to Brig. Gen. H. G. Woodbury Jr., Director of Civil Works, DOA, Oct. 20, 1967, EVER 58222.

To meet the projected needs of the park and all other water users in South Florida through the year 2000, the Corps proposed the following:

- Increasing the water level in Lake Okeechobee by four feet, aiming for a range of 19.5 to 21.5 feet.
- Pumping excess floodwaters to the WCAs before releasing them to the sea.
- Backpumping excess water in canals and from areas of Martin and St. Lucie Counties into Lake Okeechobee.
- Building additional canals in South Dade County that potentially could supply water to Taylor Slough.⁴²⁶

The basic thrust was to increase the volume of water that could be stored and to avoid wasting it. The NPS continued to press the Corps for a written water guarantee for the park. In June 1968, the acting chief of engineers provided it, writing Secretary of the Interior Udall, “the Chief of Engineers will insure the project is regulated to deliver the water requirements of the Everglades National Park as set forth in the report.” Congress then authorized the modifications embodied in the review study as part of the River & Harbor Act of 1968. The projected cost was \$70 million, with \$55 million as the federal share. State officials, however, were not pleased with the Corps’ water guarantee to the park, and the Corps began to back away from what the NPS regarded as a firm commitment.⁴²⁷

The NPS, the Corps, and state officials continued discussions in 1969 and 1970 on the park’s water needs. In the summer of 1969, the FCD and the NPS agreed to an interim water delivery schedule. The schedule called for the FCD to deliver the park’s requested minimum of 260,000 acre-feet from WCA 3 to the northwest Shark River Slough under normal operating circumstances. In times of drought, however, the Corps and FCD insisted that the park would have to compete with other users. At a February 1970 meeting, the parties agreed to implement the interim schedule immediately. Further, it was decided that the park’s requested minimum deliveries to Taylor Slough would begin once the Corps had increased the capacity of canals in south Dade County. The Corps agreed to revisit the question of water delivery to the park when the level of Lake Okeechobee had been raised. It also committed to beginning a restudy of the C&SF Project and South Florida water needs in 1980. The Corps still declined to give a minimum guarantee to the park that would give its water needs priority in time of drought.⁴²⁸

⁴²⁶ Corps, Draft *Survey-Review Report on Central and Southern Florida Project: Water Resources for Central and Southern Florida*, Feb. 15, 1968; Godfrey, 83–84; Blake, 191.

⁴²⁷ Maj. Gen. F. J. Clarke, Corps, to SOI Udall, June 14, 1968, cited in Godfrey, 86; Frank Nix, ENP Water Supply, Sept. 25, 1969, EVER-00952.

⁴²⁸ Godfrey, 88–89; Supt. Raftery to Robert W. Padrick, C&SF FCD, July 15, 1969, Supt. Raftery to Sen. Holland, Feb. 2, 1970, SLH papers, box 601.

As described in Chapter 9, public concern for the environment had increased dramatically by the late 1960s, and some national lawmakers were determined to obtain a guaranteed water supply for Everglades National Park. When it became clear that the Corps, the state, and the NPS could not agree on this final point, Wisconsin Senator Gaylord Nelson and Maine Senator Edmund Muskie placed the water guarantee into the 1970 act appropriating funds for the C&SF Project. Congressman Dante Fascell led the effort in the House. The law provided that, as soon as the project modifications had been completed, the park would annually receive the lesser of 315,000 acre-feet of water or 16.5 percent of total water deliveries from the project.⁴²⁹ The act also incorporated the terms of the February 1970 agreement, placing the force of law behind the Corps' promise to commence a restudy of the entire C&SF Project in 1980.⁴³⁰

The congressionally mandated minimum schedule of water deliveries to the park remained in operation from 1970 through 1983. As detailed in the following chapter, the experience gained in the 1970s and 1980s revealed the inadequacies of that schedule. This then led to a new program of experimental water releases after 1983.

⁴²⁹ The Corps and the FCD had the tools in place to deliver the 260,000 acre-feet earmarked for the Northwest Shark Slough (via the S-12 structures). The 55,000 acre-feet assigned to the Northeast Shark Slough and Taylor Slough could not be provided until the requisite structural modifications were finished.

⁴³⁰ River Basin Monetary Authorization and Miscellaneous Civil Works Amendments Act, June 19, 1970 (P.L. 91-282, 84 Stat. 310). The most detailed account of the negotiations and controversies that led to the water guarantee in the 1970 act is in Godfrey, 86-90. As Grunwald observes in *The Swamp*, both Nelson Blake and Luther Carter wrote that the water guarantee passed over Senator Holland's objections. Grunwald convincingly shows that nothing concerning Florida passed over Holland's objections in this period and that the senator gave his tacit approval to the guarantee, Grunwald, endnote to page 253.



Wilderness on the Edge:
A History of Everglades National Park

*Chapter 9:
Water Issues, 1970 to 1992: The Rise of Environmentalism
and the Path to the Restudy of the C&SF Project*

Chapter 9: Water Issues, 1970 to 1992: The Rise of Environmentalism and the Path to the Restudy of the C&SF Project

Several Florida environmental controversies that unfolded in the 1960s and 1970s profoundly affected the climate in which Everglades National Park operated. Some of these struggles played out in nearby areas, such as the Big Cypress Swamp, while others took place some distance away in North Florida. The cumulative effect of these controversies was to raise environmental awareness in the state and add substantially to the number of people who cared about and advocated for Everglades National Park. This interest in the environment was part of a larger national trend that politicians were beginning to respond to. Some of this broader background will be briefly considered before the narrative returns to Everglades National Park's water issues.

Historians agree that environmentalism became a force to be reckoned with in the United States in the 1960s. The post–World War II economic boom brought with it a host of unforeseen consequences, such as air and water pollution and the widespread conversion of open space to factories, roads, and residential subdivisions. Concern over the degradation of the environment moved from scientific and academic circles to the general public during the 1960s. Many credit Rachel Carson's 1962 best seller *Silent Spring* with introducing the concept of environmentalism to the general public. Carson's book focused on the devastating effects on bird reproduction of the use of persistent pesticides, such as DDT (dichloro-diphenyl-trichloroethane), but it also had a broader message. In forceful and eloquent prose, Carson called for a rethinking of the whole concept of human control of nature. Throughout the 1960s, more and more attention was given to problems of pollution and uncontrolled growth. Politicians began to take notice, leading to landmark legislation, such as the national clean air and water acts and the National Environmental Policy Act of 1969.⁴³¹

The Cross-Florida Barge Canal

The Cross-Florida Barge Canal was the first issue that raised substantial environmental concerns for many Floridians. A canal connecting the Gulf of Mexico and the Atlantic Ocean had long been a dream of North Florida business owners. The Corps began work on a 230-mile sea-level canal in the 1930s. The route started at Yankeetown on the Gulf (seventy miles north of Tampa) and followed the Withlacoochee River to near Dunnellton. From there a canal was to be dug, connecting with the Oklawaha River southeast of Ocala. The Oklawaha drains into the St. Johns River, which reaches the Atlantic Ocean east of Jacksonville. Opposition from railroad interests and the advent of

⁴³¹ Donald Worster, *Nature's Economy: A History of Ecological Ideas*, 2nd ed. (Cambridge: Cambridge University Press, 1994), 342–50; Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin, 1962), 296–97.

World War II stopped the project after five miles of canal had been excavated. In the 1960s, the project was revived as a barge canal with locks rather than a sea-level ship canal. Presidents John F. Kennedy and Lyndon B. Johnson and Florida Governor Farris Bryant (served 1961–1965) strongly supported the new project, and work began in early 1964.⁴³²

Had the canal been completed it would have destroyed the natural quality of the final fifty miles of the Oklawaha River, which in 1962 still retained a “wild, jungle-like character.”⁴³³ A movement to save the Oklawaha began in Gainesville and went statewide. Participants in this campaign gained considerable experience and developed informal networks. These would be of great benefit in future disputes over water policy in Florida, including those that directly affected Everglades National Park. University of Florida zoologist Archie Carr⁴³⁴ and his wife Marjorie, along with the Alachua and Florida Audubon Societies, were the early leaders in the battle to save the Oklawaha. As the struggle dragged on, they and other Florida environmentalists formed the Florida Defenders of the Environment (FDE) in July 1969. Working with a national organization, the Environmental Defense Fund, the FDE brought suit against the Corps and mobilized hundreds of Floridians to attend hearings and lobby politicians. By 1970, national attention was being focused on the proposed canal, and in January 1971, President Richard M. Nixon ordered a halt to work on the project. Further litigation ensued before the project was finally abandoned in 1977. Long before the project died, a section of the Oklawaha was already impounded by dams. Nonetheless, by saving a portion of the river, Florida environmentalists had won an important victory.⁴³⁵

Preserving Biscayne Bay

Plans in the 1960s for development in and along Biscayne Bay, just east of Everglades National Park, provoked more battles and spurred the growth of an environmental movement in Dade County. This also resulted in the creation of a new park, Biscayne National Park. In 1960, about a dozen residents of a string of thirty-three keys separating Biscayne Bay from the Atlantic Ocean incorporated the area as the City of Islandia (figure 9–1, Seadade and Islandia). Real estate interests were behind the incorporation. The total acreage of the keys was about 4,000; seven-and-one-half-mile-long Elliott Key was the largest. Developers’ plans for Islandia included resort homes, a marina, and a causeway across the bay from the mainland. In 1962, billionaire shipping tycoon Daniel K. Ludwig announced that he had purchased 2,200 acres on Biscayne Bay east of Homestead. He planned a seaport to be known as Seadade, an oil refinery with a 50,000-

⁴³² Carter, 269–278; Godfrey, 102. Chapter 5 (pp. 265–312) of Luther Carter’s *The Florida Experience* is a detailed account of the barge canal story.

⁴³³ Carter, 267.

⁴³⁴ Time-Life Books in 1973 published a well-received book by Archie Carr, *The Everglades*.

⁴³⁵ Godfrey, 105–106; Carter, 278–88.

barrel-per-day capacity, and a shipping channel dredged across the bay from the mainland to the Atlantic.⁴³⁶



Although supported at first by the Metro Dade County Commission, the Greater Miami Chamber of Commerce, and the *Miami Herald*, the Seadade project soon encountered serious opposition. Business owners and residents in Miami Beach, some scientists at the University of Miami, and concerned citizens feared that the operations of a refinery and shipping facility would inevitably foul Biscayne Bay and ruin nearby beaches. A Pan American Airways employee, Lloyd Miller, took the lead in founding a citizens' group, the Safe Progress Association (SPA). Miller had organized the Mangrove Chapter of the Izaak Walton League in South Florida and was able to draw on the resources of the local chapter and the league's national office. Another cofounder of the SPA was a local conservationist, James Redford. His wife, author Polly Redford, was a mainstay of the campaign against Seadade and developed into a leading South Florida environmental

⁴³⁶ "Battle Over Islands Stirs Up Biscayne Bay," *New York Times*, June 9, 1963; Carter, 155–58; Davis, *Everglades Providence*, 440–41.

activist. The SPA mounted a sophisticated public relations and lobbying campaign to preserve Biscayne Bay. Managers at Everglades National Park were also concerned and attended meetings and hearings on the Seadade plans. The ecology of Biscayne Bay was poorly understood, and the U.S. Fish & Wildlife Service assigned a biologist from its Vero Beach office, Arthur Marshall, to lead a team on a study of the bay. Marshall also advised the Mangrove Chapter of the Izaak Walton League, which played a key role in the fight to preserve the bay. The FWS report awakened many to the unique attributes of the bay, among them its coral reefs, turtle grass stands, and tropical hardwoods on the keys. The report concluded that they were nationally significant.⁴³⁷

The SPA's Lloyd Miller is said to have been the first to propose a unit of the national park system in Biscayne Bay. Supporters believed that the establishment of an NPS unit would prevent both the Seadade and Islandia developments and preserve natural values. The idea gradually gained momentum. Secretary of the Interior Udall made a personal inspection of the area and gave his support. Crucially, Representative Dante Fascell, representing much of Dade County, became an ardent and tireless supporter. Fascell involved Joe Browder, then southeastern representative of the National Audubon Society (NAS), in drafting and promoting legislation to establish Biscayne National Monument. Congress authorized Biscayne National Monument in October 1968, and SOI Walter J. Hickel declared it established on June 20, 1970. These actions preserved from development 4,000 acres of keys and more than 90,000 acres of water in the bay and the Atlantic Ocean. Public Law 96-287, enacted June 28, 1980, gave the monument national park status as Biscayne National Park.⁴³⁸ The campaign to preserve Biscayne Bay firmly established an environmental constituency in Dade County. Prominent actors in the campaign, Art Marshall, Polly and James Redford, and Joe Browder, would play important roles in later campaigns to protect the Big Cypress Swamp and repair the Everglades ecosystem.⁴³⁹

⁴³⁷ "Miami Beach Worries About Shoreline," *New York Times*, May 19, 1963; Supt. Hamilton to RDSE, Dec. 7, 1962, NARA Ph, RG 79, 79-70-A-4751, box 44; Carter, 158-60; Lloyd Miller, interview by Nancy Russell and Ruth Chan, Sept. 15, 2006.

⁴³⁸ Carter, 161-62; "Biscayne Monument Set Up," *New York Times*, June 21, 1970; NPS, *Biscayne National Park General Management Plan* (Denver: NPS DSC, July 1983), http://www.nps.gov/bisc/parkmgmt/upload/GMP%201983_part1.pdf. The park's Dante Fascell Visitor Center honors the congressman who helped to create the unit.

⁴³⁹ This effort is often styled as a restoration of the Everglades, and the plan adopted by Congress in 2000 is known as the Comprehensive Everglades Restoration Plan (CERP). Most scientists agree, though, that the Everglades cannot be restored, in the sense of returning it to an original or unimpaired condition.

A Jetport Proposed for the Big Cypress Swamp

A late 1960s controversy over a plan to build a huge jetport in the Big Cypress Swamp drew national attention to the fragile ecological situation in the Everglades and brought Marjory Stoneman Douglas forward as the Everglades' most visible and honored defender. As Douglas's biographer Jack E. Davis acknowledges, prior to 1969, "the Everglades had been little more than a topic in her writing." From then until Douglas's death in 1998 at the age of 108, preservation of the Everglades would be her number one cause, for which she spoke and wrote tirelessly.⁴⁴⁰ The jetport also would give rise to a new unit of the National Park System, the Big Cypress National Preserve. The creation of the preserve would protect acreage that Ernest Coe had always insisted needed to be part of Everglades National Park but had been dropped in the political compromises of the 1940s (see Chapter 4).

In the mid-1960s, the Dade County Port Authority (PA) began searching for a new airport site both for pilot training and to supplement Miami International Airport. Miami International had become a popular site for training flights, and it was expected to reach its capacity for commercial flights before 1980. By April 1966, the PA had settled on a site in the southeastern corner of the Big Cypress Swamp, west of WCA 3 and north of Everglades National Park (figure 9–2, location of proposed jetport). At one point, the PA considered a site south of the Tamiami Trail adjacent to Everglades National Park. The service managed to steer the authority away from this location and initially expressed relief when the authority settled on a thirty-nine-square-mile (24,960-acre) tract north of the trail and six miles from the park boundary. The NPS had some concerns about aircraft noise disturbing wildlife and visitors, but the service did not in 1967 oppose the location, asking only for "appropriate consideration" of the park's views in planning the airport. About two-thirds of the site lay in Collier County, and Dade County authorities engaged in protracted negotiations to obtain authority to use the power of eminent domain in Collier. The PA began quietly buying up land sometime in 1967. In June 1968, agreement was at last reached with Collier County, and a groundbreaking ceremony for the jetport was held September 18.⁴⁴¹

⁴⁴⁰ Davis, *Everglades Providence*, 481. As early as 1965, Douglas testified at a Corps hearing, arguing that the park should have a higher priority in the allocation of water. "Author Backs Request for More Glades Water," *Miami Herald*, Jan. 20, 1965.

⁴⁴¹ Carter, 188–93; Robert S. Gilmour and John A. McCauley, "Environmental Preservation and Politics: The Significance of 'Everglades Jetport,'" *Political Science Quarterly* 90, no. 4 (1975–1976):722–23; Supt. Allin to Alan C. Stewart, Director, Dade County Airport Authority [*sic*], Mar. 21, 1967.

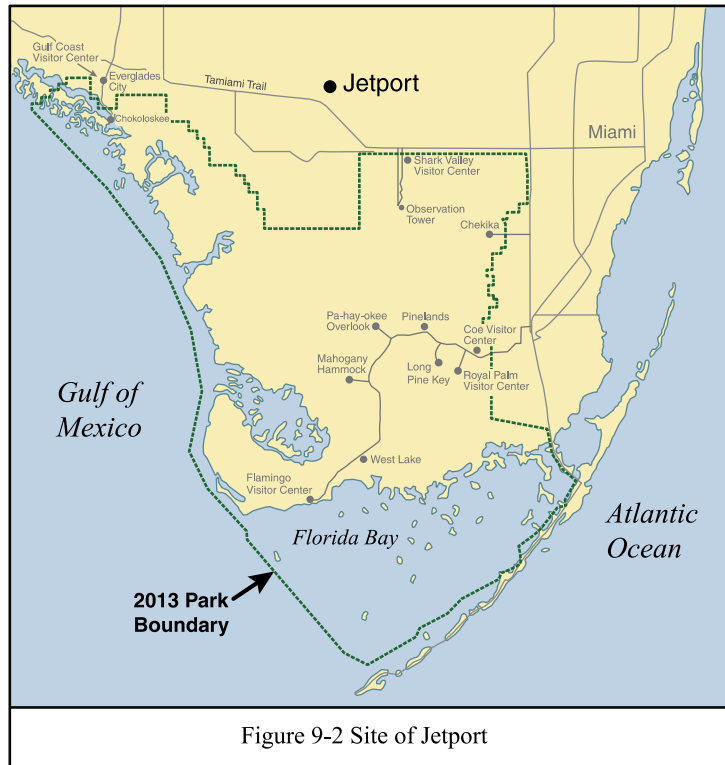


Figure 9-2 Site of Jetport

The PA’s invitation to the groundbreaking referred to the facility as “THE WORLD’S FINEST ALL-NEW JETPORT [capitals in original].” Dade County planned to plunge headlong into the jet age, dreaming that as much as half of the international flights from the U.S. East Coast ultimately would originate in South Florida. The plan was to build four to six runways, two as long as 30,000 feet. The site was fifty miles from the city of Miami, but the PA intended that a rapid-transit line and the southern segment of Interstate 75 (I-75), then in the planning stages, would connect the jetport with Miami. Dade County authorities confidently predicted that a large urban area would develop around the jetport.⁴⁴²

Only belatedly did NPS managers awaken to the impact of the proposed jetport on water quality and supply for Everglades National Park. It was the chair of the FCD’s governing board, Robert W. Padrick, who alerted the NPS and conservation leaders to the potential consequences of the jetport. Feeling that the FCD had been misled about the PA’s intention to have I-75 routed through WCA 3, which was managed by the state as a wildlife refuge, Padrick invited more than a dozen representatives of federal and state agencies and conservation organizations to the board’s December 1968 meeting.⁴⁴³ In the

⁴⁴² Dade County Port Authority, Invitation to Ground-breaking, Sept. 1968, EVER 22965; Carter, 189.

⁴⁴³ Attendees included NPS Attorney Rodger W. Pegues, NPS Water Resource Specialist Manuel Morris, Art Marshall of FWS, Nathaniel Reed from the governor’s office, Joe Browder of NAS, Gary Soucie, southeastern representative of the Sierra Club, and representatives from the Corps, the Florida Department of Natural Resources, and the Florida Game and Fresh Water Fish Commission. Carter, 195.

words of Luther Carter, “what before had been misgivings about the jetport began to harden into opposition” at this meeting. The next month, one attendee, Joe Browder, wrote to Governor Claude Kirk’s environmental specialist Nathaniel Reed that “we are all in big trouble if the Big Cypress Jetport is developed.” NPS and FWS employees were prohibited from lobbying on a political question, such as the jetport, but they eventually entered into an informal alliance with conservationists, sharing information and planning strategy to stop the jetport. The opposition became even stronger when, at a February 1969 public hearing, it became obvious that the PA had made no serious inquiry into the environmental impacts of the jetport.⁴⁴⁴

Although state authorities at this point seemed to believe that the jetport was inevitable, opposition among conservation organizations and within the NPS continued to mount. Everglades Superintendent John C. Raftery stated that the jetport would “break up our last natural source of water” and introduce pollutants that would “drastically alter the park’s ecology.”⁴⁴⁵ In April 1969, the NAS and the National Parks Association spearheaded the formation of the Everglades Coalition. A key player in the coalition’s emergence was Frank Masland Jr., a Pennsylvania carpet manufacturer and long-time member of the NPS Advisory Board. Masland made some phone calls and arranged a meeting in New York with Anthony Wayne Smith of the National Parks Association. The result was the formation of the Everglades Coalition with Smith as chair and NAS’s Joe Browder as coordinator.⁴⁴⁶ The Everglades Coalition was a departure for the environmental/conservation community, which in previous battles had used only informal coalitions. In its original form, the coalition consisted of twenty-one conservation-oriented organizations and two large industrial unions: the United Auto Workers and the United Steel Workers of America.⁴⁴⁷ Coalition members learned that the Department of Transportation (DOT) had not investigated the effects on wildlife of routing I-75 through WCA 3, seemingly in violation of the 1966 U.S. Transportation Act. Using this as a lever, the coalition wrote to Secretary of Transportation (SOT) John Volpe asking that a new location for the jetport be found.⁴⁴⁸

⁴⁴⁴ Arthur R. Marshall to Nathaniel Reed, Jan. 29, 1969, EVER 22965; Carter, 195–96. As described in Chapter 11, Reed was responsible for establishing a science center at Everglades National Park. He has continued his commitment to the Everglades ecosystem, serving on the board of the Everglades Foundation at this writing.

⁴⁴⁵ “Battle on to Save Park,” *St. Petersburg Times*, May 1, 1969.

⁴⁴⁶ Joseph Browder, interview by author, Feb. 7, 2012.

⁴⁴⁷ Other original coalition members included the American Fisheries Society, American Forest Institute, American Forestry Association, Anti-Pollution League, Audubon Naturalist Society of the Central Atlantic States, Citizens Committee on Natural Resources, Defenders of Wildlife, Florida Audubon Society, National Recreation and Park Association, National Wildlife Federation, Natural Area Council, Nature Conservancy, Sierra Club, Wilderness Society, Wildlife Management Institute, and Wildlife Society. “Coalition Forms to Fight Florida Jetport,” *National Parks Magazine* 43, no. 260 (May 1969): 28.

⁴⁴⁸ Carter, 196–97; Godfrey, 112–13.

Confronted by growing opposition to the jetport and a spate of negative publicity in the national press, Secretary of the Interior Hickel and SOT Volpe agreed in June 1969 to order a special study on the environmental impact of the jetport. Fearing they had been too hasty in approving the jetport, Governor Kirk and Nathaniel Reed supported the study. If it ended up with a negative verdict on the site, the study would give them cover if they were forced to backtrack from their initial acquiescence in the jetport site. Charged with picking a lead investigator, Undersecretary of the Interior Russell E. Train chose Dr. Luna Leopold, a highly respected hydrologist with the USGS and son of land-use-ethics pioneer Aldo Leopold. Luna Leopold insisted on two conditions: that he alone would choose his collaborators and that the final report would represent the team's findings, not those of the two departments. Leopold selected Arthur Marshall as Florida coordinator for the study. The report was sponsored by the two departments, but DOT's input came in too late to be incorporated in the final report, which was released in September 1969, with only the DOI on the title page.⁴⁴⁹

What came to be known as the "Jetport Report" dealt a devastating blow to backers of the jetport (figure 9–3, Luna Leopold Report on the Jetport).⁴⁵⁰ The report reinforced the point that the park was dependent on sheet water flow from the Big Cypress Swamp and that a jetport and all that came with it would interfere with that flow. The authors fully understood that the potential impact was not from the jetport alone but from all the development that would surround it. The report opened with this statement:

Development of the proposed jetport and its attendant facilities will lead to land drainage and development for agriculture, industry, housing, transportation, and services in the Big Cypress Swamp which will inexorably destroy the South Florida ecosystem and thus the Everglades National Park.

Without offering suggestions for an alternate site, the report concluded that the development of even a training airport at the Big Cypress location would bring attendant development leading to "ecosystem destruction." A report sponsored by the National Academy of Sciences, released a few days later, reinforced the Jetport Report's conclusions and proposed that all of the Big Cypress Swamp be made a water conservation area.⁴⁵¹

⁴⁴⁹ DOI Undersecretary Russell E. Train to DOI Solicitor, June 4, 1969, NARA II, RG 48, DOI, box 179; Carter, 198–201; Godfrey, 114–15. Train had a distinguished career as an environmentalist, subsequently serving as chair of the Council on Environmental Quality (1970–1973), EPA administrator (1973–1977), and in various capacities with the World Wildlife Fund.

⁴⁵⁰ The full title is U.S. Department of the Interior and Luna B. Leopold, *Environmental Impact of the Big Cypress Swamp Jetport* (Washington, DC: DOI, 1969).

⁴⁵¹ DOI press release, "Leopold Report Released," Sept. 18, 1969, EVER 22965; Godfrey, 115–16; Blake, 220.

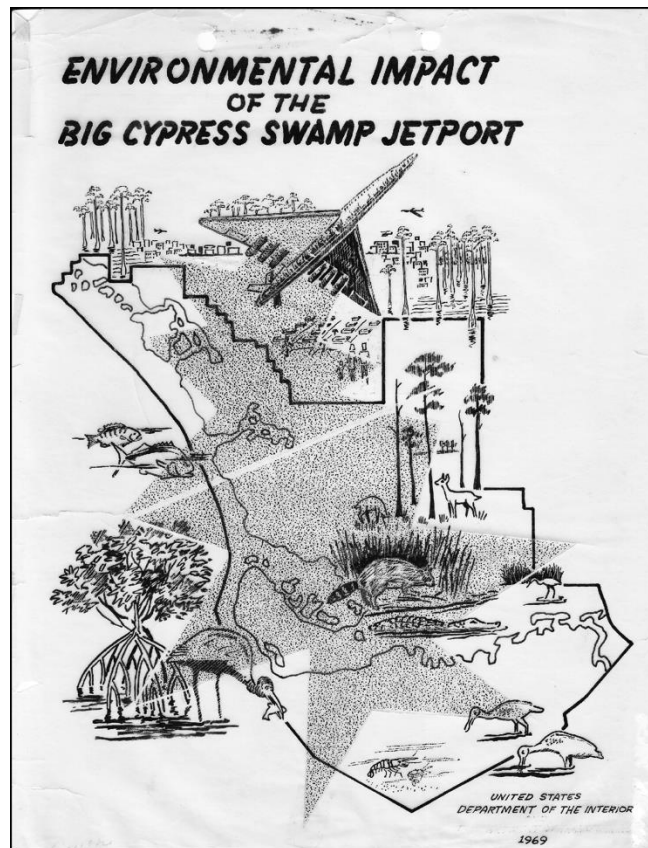


Figure 9-3, Luna Leopold Report on the Jetport

The jetport fight also started a new phase in Marjory Stoneman Douglas’s life. In an oft-told story, an Audubon Society colleague of Joe Browder’s, Judy Wilson, ran into the author one night in a convenience store in Coconut Grove. The two were friends and got into a conversation that touched on what Douglas was doing for the Everglades. Pressed about what she had done lately (i.e., since 1947’s *The Everglades: River of Grass*), Douglas recalled that she “casually mumbled some platitude like ‘I’ll do whatever I can.’” Realizing the value of an ally like Douglas, Joe Browder began to court her. At Douglas’s request, he gave her a tour of the scarred jetport site, where training flights were about to begin (figure 9-4, runway at the Jetport site). On the way back, the two discussed the possibility of Douglas starting a new kind of organization. By November 1969, the Friends of the Everglades was born, with Douglas as president. She wanted the broadest possible membership so set yearly dues at one dollar. Membership grew as Douglas and other members traveled statewide to warn of the harm presented by the jetport. She later said, “I’ll talk about the Everglades at the drop of a hat.” As Michael Grunwald observed, “she knew how to assert her authority as the grandmother of the Glades.”⁴⁵²

⁴⁵² Douglas, *Voice of the River*, 225, 230; Davis, *Everglades Providence*, 472–78; Grunwald, 258.

Douglas’s opposition to the jetport at times led her to make ill-considered claims. She wrote that the jetport would attract a “surrounding sprawl of industrial and residential slums.” The clear implication was that anywhere that baggage handlers and car-rental clerks lived would have to be a slum. Marjory Stoneman Douglas, “The Forgotten Man Who Saved the Everglades,” *Audubon* (Sept. 1971), 96.



Figure 9–4, runway at the Jetport site

The controversy over the jetport continued throughout the fall and winter of 1969. Articles in *Audubon*, *National Parks Magazine*, *Look*, *Life*, and the *New York Times*⁴⁵³ kept the pressure on government officials. On January 15, 1970, the DOT and DOI, with the blessing of the Nixon White House and Governor Kirk, announced that a new site, outside of the Big Cypress, would be sought for the jetport. In what became known as the “Jetport Pact,” the state and federal governments and the PA agreed to close down the Big Cypress training airport once a new site was put in operation. State and federal agencies, as well as conservation organizations, would be involved in the effort to find a new airport site, and the regional impacts of the decision would be thoroughly considered. The pact also included a commitment by the DOI and the DOT to further investigate the regional environment. This led to the South Florida Environmental Project, an interagency effort that produced multiple scientific studies (see Chapter 11). The Jetport Pact was renewed three times, but a suitable site was never identified. In the meantime, improvements at Miami International Airport greatly reduced the need for a new facility. As of this writing, the Dade-Collier Training and Transition Airport remains in operation in the Big Cypress, providing a precision instrument landing and training facility for commercial and military pilots. No aircraft are based at the airport, which handles 175,000 operations annually. Only 900 acres of the PA’s 24,960 have been developed, with the remainder managed by the Florida Game and Freshwater Fish Commission.⁴⁵⁴

⁴⁵³ See Paul Brooks, “Superjetport or Everglades Park,” *Audubon* 71 (July 1969); “Progress Menaces the Everglades,” *National Parks Magazine* 43 (July 1969); Anthony Wolff, “The Assault on the Everglades,” *Look*, Sept. 9, 1969; John D. MacDonald, “Threatened America—Last Chance to Save the Everglades,” *Life*, Sept. 5, 1969; “New Type of Jetport Is Urged for Miami,” *New York Times*, Sept. 28, 1969.

⁴⁵⁴ DOI press release, “Agreement Reached to Relocate Miami Jetport,” Jan. 15, 1970, EVER 22965; Godfrey, 115–18; Miami-Dade Aviation Department website, www.miami-airport.com/dade_collier.asp, accessed Sept. 1, 2011.

Big Cypress National Preserve

The jetport controversy demonstrated that a major portion of the wetlands of South Florida lacked adequate protection. A few months after the Jetport Pact was announced, NPS Director George Hartzog wrote SOI Hickel that “if we are to meet our responsibilities for preserving the environmental values in Big Cypress Swamp . . . and protect the environment and ecosystem of Everglades National Park, it is necessary to protect and preserve portions or all of Big Cypress Swamp.” Hartzog attached reports that outlined a range of options for protecting the Big Cypress, including federal purchase (figure 9–5, in the Big Cypress Swamp). An Everglades Jetport Advisory Board established by Rogers C. B. Morton (SOI as of Jan 29, 1971) weighed in with its recommendations in April 1971. The NPS much preferred that the state protect and administer the Big Cypress; there was no enthusiasm for making it a unit of the National Park System. The Nixon Administration, to the surprise of many, supported the idea of a federal preserve in the swamp. This decision was political; Nixon wanted to burnish his credentials as an environmentalist and take an issue away from Senator Henry Jackson, considered his likely Democratic opponent in the 1972 election. The Big Cypress National Preserve was authorized by legislation passed in October 1974. In recognition of long-standing uses of the area, the law allowed hunting, off-road vehicle use, and oil and gas exploration to continue in the preserve, subject to regulations and permitting requirements. The law also granted to members of the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida the right to continue their “usual and customary use and occupancy,” again subject to appropriate regulation. The Everglades superintendent had administrative responsibility for Big Cypress National Preserve until 1986.⁴⁵⁵ The establishment of the preserve helped to protect the watershed of the Gulf Coast portion of Everglades National Park, but it was far from a complete solution to the park’s water problems.

South Florida’s Water Problems Increase and a More Holistic Approach Emerges

The controversies over the Cross-Florida Barge Canal, Seadade, and the jetport led to a significant increase in environmental awareness in South Florida by the early 1970s. The area also continued its rapid growth. Between 1960 and 1970, the combined population of Dade, Broward, and Palm Beach Counties more than doubled, going from 1.05 million to 2.2 million. By 1980, it had grown another 50 percent, to 3.2 million. Planting, mostly of sugar cane, in the Everglades Agricultural Area also grew substantially. These trends put increasing pressure on the water supplies shared by all users in South Florida,

⁴⁵⁵ Dir. Hartzog to SOI Hickel, June 8, 1970, NARA-II, RG 79, NPS CCF, box 2735; Carter, 242–45; P. L. 93–440, An Act to Establish Big Cypress National Preserve, as Amended by P.L. 100–301, The Big Cypress National Preserve Addition Act, <http://www.nps.gov/bicy/parkmgmt/loader.cfm?csModule=security/getfile&PageID=162266>, accessed Sept. 1, 2011; SAR, 1986.

including Everglades National Park. Signs of environmental deterioration were also increasingly visible throughout the region: in Lake Okeechobee, the water conservation areas, Everglades National Park, and Florida Bay.

Reuben Askew was inaugurated to the first of two terms as governor of Florida in January 1971. Concerned over the environmental situation in the state, he convened a three-day Governor's Conference on Water Resources in Miami Beach in September 1971. The conference gathered Florida's top experts on water management, including representatives from the NPS, FWS, USGS, Florida Game and Fresh Water Fish Commission, and the sugar industry. Key participants were Art Marshall,⁴⁵⁶ Florida Wildlife Federation president John Jones, and state senator Daniel Robert "Bob" Graham. Art Marshall was one of the principal authors of the recommendations coming out of the conference. These in turn formed the basis for legislation presented the following year to the state legislature.⁴⁵⁷



Figure 9-5, in the Big Cypress Swamp

The 1972 Florida legislature passed four measures with implications for water management and the future of Everglades National Park:

- Environmental Land and Water Act
- Water Resources Act
- Land Conservation Act
- Florida Comprehensive Planning Act

⁴⁵⁶ Marshall by this point was with the University of Miami.

⁴⁵⁷ Gov. Reuben Askew to Conference Participants, Dec. 30, 1971, EVER 55853, box 62; Godfrey, 137–40; Grunwald, 260–61. Bob Graham was the son of rancher/real estate developer/politician Ernest Graham.

The Water Resources Act established five new water management districts to replace the existing flood control districts. The change-over became effective in 1977, when the South Florida Water Management District (SFWMD) took over the functions of the Central and Southern Florida Flood Control District and the Okeechobee Flood Control District.⁴⁵⁸ Of critical importance, the boundaries of the new water management districts were based on watersheds. Accordingly, the SFWMD included the Kissimmee River basin and the Gulf Coast counties up to Charlotte Harbor as well as the Everglades basin and east coast areas (see figure 8–1). The water management districts also had a broader mandate: they had responsibility for maintaining water supply and water quality, not merely providing flood protection. The Land Conservation Act authorized the issuance of \$200 million in bonds, the proceeds to be used to purchase environmentally sensitive properties, thus preserving them from development. This was the beginning an ongoing effort by the state to protect the environment through major land purchases. All in all, the 1972 legislation was a turning point for Florida. The state’s political leadership for the first time was attempting to coordinate policy and set clear goals in the areas of growth management, land and water management, and environmental protection.⁴⁵⁹

The change in political direction came as scientists studying Everglades problems were adopting a more holistic conception of the larger South Florida ecosystem and thinking about ways its functioning could be improved. More and more, scientists realized that the C&SF Project had produced a disconnected or disarticulated ecosystem. Art Marshall was at the center of this movement. In the 1970s, Marshall developed an overall conceptual plan for the repair of the Everglades ecosystem that aimed to enhance its natural functions.⁴⁶⁰ Florida Wildlife Federation president John Jones was apparently the first to dub this the “Marshall Plan,” deliberately invoking parallels with the plan of massive assistance to Europe developed by U.S. Secretary of State George Marshall after World War II.⁴⁶¹ Art Marshall’s goal was to reverse to the extent feasible the compartmentalization of the Everglades ecosystem that had been accomplished by the C&SF Project and restore clean sheet flow. Dr. William B. “Bill” Robertson, research biologist at Everglades National Park from 1956 to 1997, shared the view that the C&SF

⁴⁵⁸ The other districts were the Northwest Florida Water Management District, the Suwannee River Water Management District, the St. Johns River Water Management District, and the Southwest Florida Water Management District. At this writing, the SFWMD has nine board members, appointed by the governor to four-year terms.

⁴⁵⁹ Godfrey, 140–41; Grunwald, 261–62; Gail M. Hollander, *Raising Cane in the Glades: The Global Sugar Trade and the Transformation of Florida* (Chicago: University of Chicago Press, 2008), 244–45.

⁴⁶⁰ Garald Parker, who did pioneering work on Everglades hydrology in the 1940s, wrote Art Marshall in 1973, “The only ‘out’ I see, and one that will not be politically practical, is to buy out the farmers, close up the big drainage-canal outlets, and let nature take over restoration of this misused land.” Grunwald, 254, citing Marjory Stoneman Douglas papers.

⁴⁶¹ John Jones, interview by Brian Gridley, May 23, 2001, University of Florida Proctor Oral History Center. Officially known as the European Recovery Program, the Marshall Plan was in effect from 1948 through 1951 and is given much credit for the revival of European economies in the 1950s and 1960s.

project had “destructively fragmented the basic Everglades ecosystem.” Art Marshall and other scientists fine-tuned the details of the Marshall Plan throughout the 1970s. The plan’s essential features included:

- Improving water quality in the lakes and streams of the Kissimmee River watershed.
- Dechannelizing the Kissimmee River (Canal C-38).
- Cleaning up the water flowing into Lake Okeechobee from the EAA, the Kissimmee basin, and other sources.
- Setting the target level for Lake Okeechobee at 15.5 feet to 17.5 feet, rather than raising it as the Corps proposed.
- Restoring sheet flow from WCA 3 to the Big Cypress National Preserve on the west and Everglades National Park on the south.
- Filling in some of the canals in the East Everglades area (the area between the park’s eastern boundary and the perimeter canal).
- Legislatively establishing effective limits on urban and agricultural development.⁴⁶²

Marshall focused most of his attention on the upper Everglades, but improvements in water quality and restored sheet flow would also benefit Everglades National Park. In the 1980s, state officials developed a stronger interest in protecting and repairing the Everglades ecosystem, while the federal government was less of a player. Bob Graham was inaugurated to the first of two terms as governor in January 1979. At first, Graham did not devote much attention to the state’s environmental issues. Two years into his term, things changed. Ronald Reagan, who became president in January 1981, was convinced that environmental regulation was a drag on the U.S. economy and opposed expanding the acreage owned by the federal government. One month after the inauguration, a ten-page article on Florida’s environmental woes appeared in *Sports Illustrated*. This piece, which ran in the very popular swimsuit issue, included sharp criticism of the governor.⁴⁶³ Stung by the article and aware that little was to be expected from the national government as long as Reagan held office, Governor Graham soon made the repair of the Everglades a top priority. After consulting with a number of scientists and conservationists, in August 1983, he unveiled a major initiative: “Save Our Everglades.”⁴⁶⁴

⁴⁶² Marshall first articulated most of these proposals in a June 1971 paper, “Repairing the Everglades Basin.” Godfrey, 136–37; Arthur R. Marshall, “For the Future of Florida Repair the Everglades,” 3rd ed., 1982, <http://www2.fiu.edu/~glades/marshall/FI06011102/index.htm>; Bill Robertson to All Concerned, Feb. 7, 1973, EVER 55853, box 62.

⁴⁶³ Robert H. Boyle and Rose Mary Mechem, “There’s Trouble in Paradise,” *Sports Illustrated* 54 (Feb. 9, 1981). The article was instigated by Florida Wildlife Federation president John Jones and included quotes from Marjory Stoneman Douglas, Art Marshall, and Nathaniel Reed.

⁴⁶⁴ Godfrey, 163–80.

The goal of Save Our Everglades was to have “the Everglades of the year 2000 . . . look more like the Everglades of the year 1900 than the Everglades of today.” What Graham announced was more a set of objectives than a detailed plan. Key elements included:

1. Dechannelizing the Kissimmee River and restoring its marshes.
2. Re-engineering the Tamiami Trail and Alligator Alley (Interstate 75) highways to allow more water to flow beneath them into the lower Everglades.
3. Supporting Everglades National Park in its efforts to get the Corps to revise water delivery schemes to benefit the park.
4. Converting two mostly state-owned tracts within the EAA—the Holey Land and the Rottenberg Tracts—to wetlands.
5. Protecting the deer herd in WCA 3.
6. Buying land in the Big Cypress Swamp and Fakahatchee Strand to protect areas that served as habitat for the Florida panther.

A number of these goals were taken directly from the Marshall Plan. Florida environmentalists greeted Graham’s initiative with enthusiasm. It was well understood, however, that little of the program could be accomplished without federal assistance. Graham also took steps to revive the Everglades Coalition, which had become inactive after the jetport fight died down. Graham invited representatives from the leading conservation and environmental organizations to a March 1985 meeting. The Everglades Coalition was then revitalized with the National Parks Association taking on a coordinating role. The coalition’s annual meetings, the first of which was held in January 1986, became important forums for the interchange of ideas among scientists, politicians, and federal and state land managers. They also served to keep Everglades issues in the public eye.⁴⁶⁵

In November 1986, Bob Graham was elected to the U.S. Senate, where he continued his efforts to repair the Everglades ecosystem. His successor as governor, Republican Bob Martinez, maintained some of Graham’s environmental initiatives, but his appointments to the board of trustees of the SFWMD were more pro-business than Graham’s. Expanding on earlier efforts, Martinez engineered the 1990 passage of Preservation 2000, which added \$300 million yearly to the funds available for the purchase of environmentally sensitive lands throughout Florida. Preservation 2000 and its successor program, Florida Forever, are among the most aggressive and successful land acquisition programs adopted by any state. By 2009, the programs had purchased more than one million acres, but very little of them are directly related to Everglades restoration.⁴⁶⁶

⁴⁶⁵ “Florida Must ‘Heal’ Glades, Graham Says,” *Miami Herald*, Aug. 10, 1983; Godfrey, 180–81; Steven C. Whitney, NPCA, to Karen Destry, Oct. 28, 1985, NPCA papers, box 75.

⁴⁶⁶ Godfrey, 244–45; “Florida Now and Again,” *St. Petersburg Times*, Feb. 22, 2009.

Water Imbalances and Attempted Fixes

While the social and political landscape of Florida evolved in the 1970s and 1980s, managers at Everglades National Park continued their efforts to understand the connections between surface water deliveries and the functioning of the park's natural systems. Research funds remained limited until Nathaniel Reed engineered the creation of the South Florida Research Center in late 1976 (see Chapter 11). In spring 1979, Superintendent John Good acknowledged that "we really don't know a lot about the effect of water management on the park."⁴⁶⁷ Throughout the 1970s, the FCD/SFWMD operated under the interim schedule of minimum monthly deliveries of water to the park agreed to in July 1969 and reaffirmed in the 1970 law (see Chapter 8). The schedule specified that 84 percent of these deliveries would go into the western portion of Shark Slough, via the S-12 structures. Except in the drought year of 1971, those minimums were achieved. The smaller deliveries to the eastern Shark Slough and Taylor Slough could not be made for two reasons: the lack of needed water control structures and the danger of flooding private property in the East Everglades. In addition to the scheduled deliveries, the Corps at times released large pulses of water via the S-12s after heavy rains or in advance of hurricane season, to meet its flood control responsibilities. It was increasingly apparent that the operations of the C&SF Project left the eastern areas of the park too dry and frequently provided too much water to the western areas.⁴⁶⁸

As described in Chapter 8, Congress had authorized the Corps in 1968 to build the South Dade Conveyance System. Some features in the plan were abandoned, but the remainder were completed by the 1980s. New construction included adding large water gates along the L-29 Canal (S-333 and S-334), widening the L-31N Canal, and installing gates and pumping stations in the L-31W and C-111 Canals along the park's eastern border (figure 8-4). The structural modifications connected the canals in south Dade with WCA 3 for the first time. The changes provided the potential to move considerably more water from WCA 3 into the L-29 Canal. From there, water could be released through culverts under the Tamiami Trail into northeast Shark Slough as well as sent to canals L-31N, L-31W, and C-111, which were just east of the park.

Even with more capacity added to the system, getting water from the canals to the park was a thorny matter. In the East Everglades, 100,000 acres or more of private property lay between the L-31 Canal and park. Included in this acreage was what came to be known as the 8.5 Square Mile Area (8.5 SMA), which had begun to attract residents and plant nursery operators. Farther south, a 5,000-acre tract between the L-31W and the C-

⁴⁶⁷ "Everglades Face Issues on Ecology, Economics," *New York Times*, Mar. 25, 1979.

⁴⁶⁸ Everglades National Park/East Everglades Resource Planning and Management Committee, *Implementation Plan*, Apr. 18, 1975.

111, known as Frog Pond, had been rock plowed and was farmed seasonally, even though it was prone to flooding. Farming was also taking place in the area surrounding the C-111 Canal (sometimes called the C-111 basin), to the south of Homestead and Florida City. Operating the system so as to get more water to the northeast Shark Slough threatened to flood the 8.5 SMA. Farther south, farmers objected to the maintenance of high water levels in the L-31W and C-111 because it threatened to drown their winter vegetable crops. The limestone bedrock in this part of Dade County is extremely porous. Lowering the water stage in the two canals lowered the water table in the adjacent Taylor Slough and panhandle sections of the park.

Miami/Dade County was slow to realize the consequences of allowing settlement in the 8.5 SMA. Lying west of Levee 31N, the 8.5 SMA had no guarantee of flood protection, but there was nothing to stop people from living there. Few residents bothered to obtain building permits, but Miami-Dade officials ignored these violations. Many residents were Cuban exiles who had little experience with zoning and building regulations. A series of dry years in the 1970s gave residents a false sense of security. Then, in August 1981, Tropical Storm Dennis brought torrential rains that caused widespread flooding. Residents believed they were entitled to flood protection and clamored for it. The Dade County Commission in October 1981 attempted to deter settlement by altering the area's zoning to a maximum of one residence per 40 acres. This move added to residents' sense of being neglected and mistreated by government.⁴⁶⁹

In Frog Pond and the C-111 basin, the dry years in the late 1970s led farmers to expect that the soil would be dry enough by mid-October to plant tomatoes and other crops. In wetter years, this was possible only if the SFWMD lowered the water level in canals L-31W and C-111 well below their target levels. Under pressure from the farmers, the district in 1982 began lowering the water level in the canals to allow the October planting. Lower levels in the canals, though, deprived Taylor Slough of needed water. Everglades National Park agreed to the lowering in fall 1984 for that year only, to test the effects on Taylor Slough. It soon was apparent to park scientists that the fall drawdowns did indeed deprive Taylor Slough of water flows. Superintendent Michael Finley, who arrived in July 1986, began to pressure the district and the Corps on the issue of the drawdowns, pointing out that the L-31W had been added specifically to provide water to Everglades National Park. Apparently in retaliation, farmers built a chain-link fence along the state road leading to the park's main entrance. The NPS protests had some effect, but the SFWMD continued to institute drawdowns well into the 1990s.⁴⁷⁰

⁴⁶⁹ Godfrey, 254.

⁴⁷⁰ Thomas Van Lent, Robert Johnson, and Robert Fennema, *Water Management in Taylor Slough and Effects on Florida Bay* (Homestead, FL: SFRC, Nov. 1993), 14–15; Everglades National Park/East Everglades Resource Planning and Management Committee, *Implementation Plan*, April 18, 1985; Michael Finley, interview by author, Nov. 19, 2012. Finley's response to the "spite fence" was to describe it to friendly reporters as resembling "Auschwitz on the Glades."

Everglades National Park Lobs a Bombshell

By the winter of 1982/83, it was apparent that the twelve-year-old minimum water delivery schedule was not meeting the park's needs. Everglades National Park staff was already in discussions with the SFWMD over possible changes to the schedules when that winter brought heavy rains to South Florida. The Corps flushed huge amounts of water to the sea via canals north of the park but still was forced to release large quantities to the park via the S-12 structures. The park received three and one-half times the minimum deliveries, with disastrous results. Alligator nests were flooded out and the feeding patterns of wading birds were disrupted. The plug near the mouth of Canal C-111 had been removed during the 1981 and 1982 rains, adversely affecting Barnes and Card Sounds and Florida Bay. The events of the winter of 1982/83 confirmed the suspicions of park scientists that too much water in the normally dry winter season was as detrimental as too little water.⁴⁷¹

Park discussions with the SFWMD had centered on moving away from the minimum monthly releases of water and instead tying water releases more closely to actual rainfall events. This would make the system operate more nearly as it had before compartmentalization.⁴⁷² This became known as the rainfall-driven concept. In February or March 1983, the assistant director of the SFWMD tipped off Gary Hendrix, director of the South Florida Research Center, that the district's board was about to approve another massive discharge of water into the park. Hendrix saw this as a last straw. He consulted with Superintendent Morehead about confronting the district's board. Morehead agreed with the strategy but believed he could not be the one to make the presentation. Reagan appointees in Interior were putting intense pressure on Morehead over the impending end to commercial fishing in the park (see Chapter 13). NPS Director Russell Dickenson had told Morehead to "stay in his foxhole" until the fishing controversy died down. Morehead sent Hendrix to an emergency meeting of the SFWMD board on March 10, 1983, where he announced that the 1970 schedule of minimum deliveries was no longer acceptable. He presented a seven-point action plan and requested that the following steps be implemented "as soon as feasible":

⁴⁷¹ "Excess Water Pours into the 'Glades Park," *Miami Herald*, Jan. 22, 1983; Godfrey, 257–58; Abrams et al., 236.

⁴⁷² Under the 1970 monthly schedule, larger releases occurred toward the end of the rainy season and were reduced during winter; the schedule did not take into account year-to-year variations in rainfall events.

1. Fill in the L-28 canal on the western edge of WCA 3 and breach the levee to allow surface flow into the Big Cypress Swamp.
2. Demolish the levee known as the L-67 extension and fill in its borrow canal to restore more normal flows into Northeast Shark Slough.
3. Divert as much flood water as “environmentally acceptable” to WCA 3-B.
4. Distribute water deliveries from WCA 3 along the full length of the Tamiami Canal—i.e., divert water into the Tamiami Canal east of S-12D, allowing it to flow under the trail and into the Northeastern Shark Slough.
5. Establish a more rigorous water quality monitoring program.
6. Defer implementation of any new drainage districts in the East Everglades.
7. Start a field test of a rainfall-driven water delivery schedule, one not driven by the perceived requirements of upstream water management.⁴⁷³

Nathaniel Reed, who was then a member of the SFWMD board,⁴⁷⁴ described Hendrix’s request as a bombshell, noting that the Corps representative present, Carroll White, “appeared to have apoplexy.” The board directed SFWMD Executive Director Jack Maloy to study the action plan and report back at a future board meeting.⁴⁷⁵

Maloy ordered a quick evaluation and then called an emergency meeting of the board for April 5. At this meeting, the board approved an emergency order that essentially embraced the park’s seven-point plan. The order authorized the executive director to take all actions “he deems necessary to alleviate to the maximum extent possible the current high water conditions” in the national park. Maloy was also authorized to make structural modifications to the C&SF Project, with the approval of the Corps. Any structural changes to the system and any alteration of minimum monthly water deliveries would require congressional action. Thomas Van Lent, then a water engineer with the district, now with the Everglades Foundation, believes the seven-point plan was a game changer, in that it forced the SFWMD to start taking the park’s needs more seriously.⁴⁷⁶

To implement the new plan, the SFWMD opened S-333 from late March to mid-June 1983, letting water flow into the L-29 Canal and thence through the culverts under the Tamiami Trail into the Northeast Shark Slough. The gate was closed in June, toward the beginning of the rainy season, to avoid any possibility of flooding private lands in the East Everglades. The Corps agreed not to complete the L-28 levee as originally planned,

⁴⁷³ Statement by Gary Hendrix to board meeting of SFWMD, Mar. 10, 1983, Marshall papers, box 2; Gary Hendrix, interview by author, July 13, 2012; John Morehead, interview by author, July 16, 2012.

⁴⁷⁴ To focus more attention on environmental issues, Governor Graham had appointed Reed to a board previously dominated by business and agricultural interests.

⁴⁷⁵ Nathaniel P. Reed to Art Marshall, et al., Mar. 14, 1983, Marshall papers, box 2; Van Lent, Johnson and Fennema, 12.

⁴⁷⁶ Board of SFWMD, Emergency Order in re: Ecological Emergency in the Everglades National Park, Apr. 5, 1983, Marshall papers, box 2; “Water Panel OKs Flood Relief for Park,” *Miami Herald*, Apr. 6, 1983; Thomas Van Lent, interview by author, June 19, 2012.

leaving a 7.5-mile gap to allow water exchange between the Big Cypress Swamp and WCA 3A. It also committed to placing two plugs in the L-67 extension. The NPS, SFWMD, and Corps also began a two-year test of keeping the S-12s open.⁴⁷⁷ This lasted until May 1985, when the gates were closed to prevent the water level in WCA 3A from becoming too low. The operation of S-333 then continued to be debated among the SFWMD, the Corps, and East Everglades land owners. In 1984, the Corps and the district conducted two field tests in which the S-333 was opened, letting water flow east into the L-29 Canal. The data collected in the tests became the basis of an agreement with East Everglades agricultural interests that established parameters for when the S-333 should be opened.⁴⁷⁸

Experimental Water Deliveries

In November 1983, Congress authorized the Corps to begin a program of experimental water deliveries in consultation with the park and the SFWMD. The legislation also authorized the Corps to provide flood protection for the East Everglades and purchase agricultural lands there if appropriate. The Corps prepared an environmental assessment, and the first field test under the Experimental Water Delivery Program (EWD) began in July 1985. This program moved in the direction of implementing the rain-driven delivery plan that park had been asking for. Water deliveries were determined based on rainfall, evaporation, the water level in WCA 3A, and the previous week's deliveries. Under the EWD Program, a series of iterative tests, that is successive tests where each builds on the experience gained in previous tests, began.⁴⁷⁹ The first five tests of experimental deliveries ran from July 1985 to 1992 and involved the Northeast Shark Slough. Test 6 (1993–1995) involved Northeast Shark Slough and Taylor Slough. Test 7 was suspended in January 2000 because of concerns over potential adverse effects of the test on the endangered Cape Sable seaside sparrow (see Chapter 28).⁴⁸⁰ Largely because of the limitations insisted upon by the East Everglades agricultural interests, EWD never delivered significant results for the park. In particular, the S-333, which delivered water into the L-29 Canal, was not kept open as often as the park had hoped. In times of high water or prior to hurricane season, large releases of water via the S-12s to the

⁴⁷⁷ Called the “Flow-Through Plan” in some documents.

⁴⁷⁸ “Flooding Poses Threat to Everglades Ecology,” *New York Times*, July 25, 1983; Godfrey, 263–265; Supplemental Appropriations Act of 1983, P.L. 98–181 (97 Stat. 1153).

⁴⁷⁹ Supplemental Appropriations Act of 1984 (P.L. 98–181), Nov. 30, 1983. Congress renewed the authorization in several subsequent acts.

⁴⁸⁰ The NPS and the FWS disagreed over the potential effects of experimental water deliveries on the Cape Sable Sparrow. Litigation involving the Natural Resources Defense Council and the Miccosukee Tribe ensued. See Alfred R. Light, “Tales of the Tamiami Trail: Implementing Adaptive Management in Everglades Restoration,” *Journal of Land Use & Environmental Law* 22, no. 1 (2006):76–78.

western Shark Slough continued, and water deliveries to the eastern section of the park did not increase enough to benefit the ecosystem.⁴⁸¹

In an effort to settle East Everglades issues, Governor Graham in February 1984 formed the Everglades National Park/East Everglades Resource Management and Planning Committee (ENP/EE Committee). Represented on the committee were East Everglades residents, state agencies, the Corps, the SFWMD, the Miccosukee Tribe, environmentalists, the USDA, and the NPS. Everglades Superintendent Jack Morehead was the NPS representative. In April 1985, the ENP/EE Committee forwarded an implementation plan to the governor. The plan included some seventy recommendations to be accomplished in line with a proposed three-part strategy. Part one of the strategy was an iterative testing process of rainfall-driven deliveries, in line with Congress's 1983 authorization. The second part was the establishment of a Southern Everglades Technical Committee (SETEC). Finally, the committee proposed a structured conflict-resolution process. The committee recommended that environmentally sensitive lands in the East Everglades be purchased and that flood protection be provided to the residents of the 8.5 SMA.⁴⁸²

As described above, the park, the Corps, and the district had been working together on the implementation and evaluation of the EWD to the park throughout the late 1980s. Republican Governor Bob Martinez continued Bob Graham's efforts to reconcile competing East Everglades interests. He also retained Estus Whitfield, Graham's highly regarded environmental advisor, in his post. In March 1988, Martinez created the East Everglades Land Acquisition Task Force. Martinez directed it to investigate the feasibility of the joint purchase by the state and federal governments of lands in the East Everglades. By this time, Superintendent Finley had developed a strong relationship with Whitfield; together they helped to select the members of the task force, keeping the "rabid crazies" from being appointed. In its September 1988 report, the task force recommended the acquisition of approximately 101,360 acres. It excluded the 8.5 SMA and Frog Pond from this recommendation and called for them to be given flood protection. Finally, it urged Congress to authorize a continuation of the experimental water delivery program.⁴⁸³

⁴⁸¹ *Conference Report to Accompany H.R. 3958, Report No. 98-551*, Nov. 15, 1983; Thomas J. Van Lent, Ray W. Snow, and Fred E. James, *An Examination of the Modified Water Deliveries Project, the C-111 Project, and the Experimental Water Deliveries Project: Hydrologic Analyses and Effects on Endangered Species* (Homestead, FL: SFNRC, Jan. 1999), 23-24; NPS SFNRC, *An Assessment of the Interim Operational Plan*, SFNRC Technical Series 2005: 2 (Homestead, FL: SFNRC, 2005), 8, <http://www.nps.gov/ever/naturescience/upload/SecureIOPReportSmall.pdf>.

⁴⁸² *Kendall v. Marsh*, No. 83-1210; Godfrey, 266-67; Everglades National Park/East Everglades Resource Planning and Management Committee, *Implementation Plan*, Apr. 18, 1985; Abrams et al., 238-47.

⁴⁸³ Florida Governor Executive Order 88-69, Mar. 23, 1988; East Everglades Land Acquisition Task Force, *Report to Governor Bob Martinez*, Oct. 1, 1988; Godfrey, 270; Michael Finley, interview by author, Nov. 19, 2012. Finley describes how he and Estus Whitfield brought Governor Martinez around to the idea that the East Everglades needed to be added to the park, and Whitfield and the governor got SOI Walter Hodel to agree.

Senator Graham and Congressman Fascell introduced the Everglades National Park Protection and Expansion Act (S. 724, H.R. 1727) on April 6, 1989.⁴⁸⁴ The bill largely embodied the task force's recommendations and had strong support from Governor Martinez, the *Miami Herald*, and the Everglades Coalition. Crucially, over the winter, Superintendent Finley had obtained a meeting with president-elect George H. W. Bush while the latter was on a keys fishing trip. Finley brought maps onto Mr. Bush's boat and explained why the park needed to be enlarged. The president-elect responded that if the bill was bipartisan, he would sign it. Bush knew Florida Bay from his fishing trips and was more environmentally inclined than Ronald Reagan. His decision to support the act was no doubt personal and political; he surely understood how important the Everglades had become to Florida voters. The bill received bipartisan support, with Florida Republican Senator Connie Mack Jr. serving as a cosponsor.⁴⁸⁵

The House Subcommittee on National Parks and Public Lands held hearings on the bill in May 1989. SOI Manuel Lujan and NPS Director Russell Dickenson sent letters of support, and representatives of leading environmental organizations testified. Jim Webb of The Wilderness Society, representing the Everglades Coalition, was deeply involved in every aspect of the legislative process. An attempt by the administration to increase the state's share of land acquisition costs (estimated at \$32 to \$70 million) from 20 percent to 50 percent was defeated. Hunters and airboat users attempted to have these uses allowed in the expansion area. They were supported by some Interior political appointees, Florida Republican Congressman Clay Shaw, the National Wildlife Federation, and the Florida Wildlife Federation. Superintendent Finley and Governor Martinez worked to keep these uses out. In the end, a compromise was reached in which hunting, including frogging, was banned. Existing private airboat owners, however, were allowed to continue to operate on designated routes for their lifetimes, and the NPS was given the authority to allow the existing commercial airboat operators along the Tamiami Trail to continue under concession contracts. All airboat use was subject to regulation by the NPS to ensure ecosystem health. Congress passed the bill in November and President George H. W. Bush signed it into law on December 13, 1989, noting that "Even in times of serious fiscal constraints, we can still meet our highest environmental priorities, and this is one of mine."⁴⁸⁶

⁴⁸⁴ Graham had introduced a similar bill in the previous session of Congress, but it was not considered. "Graham Worked Behind Scenes as Freshman Senator," *Miami Herald*, Dec. 27, 1987.

⁴⁸⁵ "Everglades Park Plan Would Add 107,000 acres," *Miami Herald*, Apr. 7, 1989; Cynthia Lenhart, Chair, EC, to Sen. Connie Mack, Apr. 26, 1989, TWS papers, ser. 12, box 29; "Expand the 'Glades," *Miami Herald*, Apr. 17, 1989; Godfrey, 270–71, citing his interview with Michael Finley.

⁴⁸⁶ "Red Tape Imperils Expansion of Everglades National Park," *Palm Beach Post*, May 17, 1989; *Congressional Record*, Nov. 7, 1989, H8029–8035; Brien [Culhane] to George, Sid, and Ron, Nov. 30, 1989, TWS papers, ser. 12, box 29; President's Statement on Signing the Everglades National Park Protection and Expansion Act of 1989, Dec. 13, 1989; Godfrey, 270–71; Michael Finley, interview by author, Nov. 19, 2012.

In addition to providing for the addition of more than 100,000 acres to the park, the 1989 act contained a key provision, section 104, concerning structural changes to the Central & Southern Florida (C&SF) Project.⁴⁸⁷ The act directed the Corps to prepare two general design memoranda (GDM), one for the Northeast Shark Slough, which it designated “Modified Water Deliveries to Everglades National Park,” and one for the “works and operations in the ‘C-111 basin’ area of the East Everglades.” The latter came to be called the “C-111 Project.” The Modified Waters Project embraced activities in the NESS, including the 8.5 SMA, roughly the area north of water control structure S-331 (see figure 6–11). The term C-111 Project was generally used to refer to the area south of S-331, in the C-111 basin. Hydrologically the two areas are closely connected, and Corps documents at times discuss them together.⁴⁸⁸

While the experimental water deliveries program first authorized in the 1984 act focused on changes to the operating procedures for the C&SF Project, the 1989 act authorized structural changes to the project. In preparing the Mod Waters GDM, Congress directed the Corps to build on the experience already gained from the experimental water deliveries and, in consultation with the Interior, “construct modifications to the . . . [p]roject to improve water deliveries into the park and . . . to the extent practicable, take steps to restore the natural hydrological conditions within the park.” The act specifically justified the contemplated project modifications based on “the environmental benefits to be derived by the Everglades ecosystem in general and by the park in particular,” and declared that no further economic justification of such environmental benefits was required. In addition, the Corps was to determine whether any modifications suggested in the final GDM would adversely affect the 8.5 SMA or “adjacent agricultural areas.” If such an adverse effect was found, the Corps was directed to construct flood protection works, but only to protect lands already developed or farmed. In preparing the GDM for the C-111 Project, the Corps was to “take all measures which are feasible and consistent with the purposes of the project to protect natural values associated with Everglades National Park.”⁴⁸⁹

⁴⁸⁷ See Chapter 6 for land acquisition pursuant to the 1989 act.

⁴⁸⁸ P.L. 101–229, Dec. 13, 1989.

⁴⁸⁹ P.L. 101–229, Dec. 13, 1989.

Authorization of the Comprehensive Review Study

The 1989 act, with its focus on the East Everglades, did not address all of the issues concerning the operations of the C&SF Project. Environmentalists and others began to see value in a more comprehensive reevaluation of the South Florida water situation. Colonel Terrence “Rock” Salt, the Corps’ district engineer in Jacksonville, succeeded in getting such a reevaluation study authorized in the 1992 Water Resources Development Act,⁴⁹⁰ which contained the following language:

CENTRAL AND SOUTHERN FLORIDA—The Chief of Engineers shall review the report of the Chief of Engineers on central and southern Florida, published as House Document 643, 80th Congress, 2d Session, and other pertinent reports, with a view to determining whether modifications to the existing project are advisable at the present time due to significantly changed physical, biological, demographic, or economic conditions, with particular reference to modifying the project or its operation for improving the quality of the environment, improving protection of the aquifer, and improving the integrity, capability, and conservation of urban water supplies affected by the project or its operation.⁴⁹¹

This review report became known as the Comprehensive Everglades Review Study or simply the “Restudy.” The 1992 act contained no appropriations for the Restudy, which became the responsibility of the incoming Clinton administration. Chapter 28 contains the story of how the Restudy eventually resulted in the Comprehensive Everglades Restoration Plan (CERP), enacted in 2000.

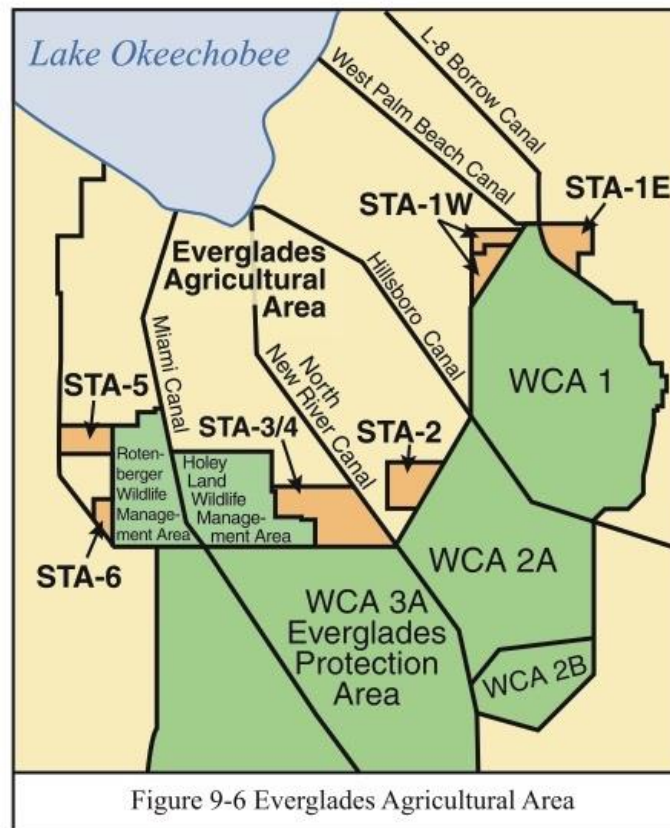
A Growing Emphasis on Everglades Water Quality

In the 1950s and early 1960s, the quantity and timing of water deliveries to the park tended to be a more urgent concern of the NPS than the water’s quality. Park managers, nonetheless, were aware that as the C&SF project was implemented, areas north and east of the park would be more intensively used for agriculture, thereby increasing the probability that run-off from these areas would be less pure. After the levees surrounding the Everglades Agricultural Area (EAA) were completed in 1962, cultivation of sugar cane and winter vegetables increased dramatically there (figure 9–6, Everglades Agricultural Area). Because of its uses in industry, particularly for manufacturing munitions, the U.S. considered sugar a strategic commodity. Through quotas and subsidies, the federal government attempted to assure an adequate supply, either from domestic cane and sugar beet producers or from dependable allies, such as the Philippines and Cuba. In the 1950s, Cuba was the world’s largest sugar

⁴⁹⁰ Godfrey, 299.

⁴⁹¹ Section 309(l), Water Resources Development Act of 1992, P.L. 102–580.

producer. The 1959 Cuban Revolution and its aftermath led the U.S. to suspend Cuba’s sugar quota and allow unlimited sugar planting in the U.S. through the end of 1962. This touched off a sugar cane boom in Florida, the bulk of it in the EAA. An estimated \$100 million was invested in Florida’s sugar industry from 1960 through 1965. With the completion of the channelization of the Kissimmee River in 1971, stock raising increased there and in the Nubbins Slough/Taylor Creek basin, which also drains into Lake Okeechobee. As described above, agriculture also had expanded in southwestern Dade County directly adjacent to the park. All of this activity had the potential to discharge pollutants to the park.⁴⁹²



The result of this expanded agriculture in South Florida was the release of increased amounts of fertilizers, animal waste, pesticides, and herbicides into surface and ground water. As early as the 1960s, the park had expressed concern about the use of pesticides by Dade County vegetable farmers and pushed to expand testing of water quality. Over time, fertilizers and animal waste emerged as the biggest problem for the Everglades ecosystem. Fertilizers and waste acted as nutrients, causing the explosive growth of

⁴⁹² Godfrey, 141–42; Hollander, 153, 168–74; Carroll A. Burroughs, ENP Acting Supt., to H. P. Nicholson, Bureau of Water Supply and Pollution Control, U.S. Public Health Service, Nov. 8, 1963, EVER 22965. Gail M. Hollander’s *Raising Cane in the Glades: The Global Sugar Trade and the Transformation of Florida* provides a masterful account of the emergence of South Florida as America’s “sugar bowl.”

algae, cattails, and other aquatic plants historically absent in the Everglades basin. Historically nutrient poor, the Everglades reacted to even small increases in nutrients, such as phosphorous. For the most part, these contaminants first appeared in Lake Okeechobee and the WCAs, but inevitably some made their way into Everglades National Park. Lake Okeechobee was first to show signs of stress in the early 1970s. Algal blooms were increasingly common, and scientists began to suspect the cause was nutrient loading from the Kissimmee basin and the EAA. Run-off from Kissimmee basin cattle pastures and barns flowed freely into the lake's watershed. When EAA sugar growers needed to lower water levels in their fields, the WMD "backpumped" water from the EAA to Lake Okeechobee or the WCAs. A 1971 USGS report concluded that the shallow lake was in the early stages of eutrophication.⁴⁹³ Art Marshall was among the first to argue that dechannelizing the Kissimmee River would both help restore Lake Okeechobee's health and improve wildlife habitat in the basin. Marshall and other scientists believed that the meandering river and its adjoining marshes previously had acted to slow water flow and cleanse the water of nutrients before it reached the lake. Once made into a straight canal, the river sped nutrients directly into the lake. A long campaign by environmentalists and others to dechannelize the Kissimmee now began.⁴⁹⁴

Undoing engineering works mandated by Congress required new congressional action. While environmentalists lobbied for this, the Corps resisted the idea of dechannelization, and EAA growers argued with Kissimmee basin ranchers over who was most to blame for Lake Okeechobee's problems. Following various studies and pilot programs, Congress in 1992 directed the Corps to begin dechannelizing C-38 and restoring more natural conditions to the Kissimmee. Planning and land acquisition occupied several years, but in spring 1999, the Corps began filling in portions of C-38, allowing the river to meander. Positive results soon appeared, with "vegetation more characteristic of pre-channelized floodplain marshes soon return[ing]."⁴⁹⁵ The successes experienced in the Kissimmee project encouraged environmentalists and Everglades National Park supporters that a more thoroughgoing repair of the Everglades ecosystem might be possible. It was an important step toward what emerged in 2000 as the Comprehensive Everglades Restoration Program (see Chapter 28).

Excess nutrients in Lake Okeechobee and the WCAs was far from Florida's only pollution issue. In the 1980s, mercury pollution in South Florida arose as a concern. The state's Department of Health and Rehabilitative Services found elevated concentrations

⁴⁹³ In eutrophication, an excess of nutrients results in explosive growth of algae and other plants. This depletes oxygen, leading to the death of fish and other aquatic animals. All lakes are naturally prone to eutrophication; when the process is accelerated by human actions, it is called "cultural eutrophication."

⁴⁹⁴ Acting Supt. Carroll Burroughs to Dr. H. P. Richardson, Nov. 8, 1963, EVER 22965; Godfrey, 141–43; Hollander, 244.

⁴⁹⁵ Godfrey, 352–71, quote at 369; Water Resources Development Act of 1992 (106 Stat. 4797, 4802); Grunwald, 357–58.

of mercury in largemouth bass taken in the WCAs and the park. Mercury enters the atmosphere regionally and globally through the burning of coal and the incineration of municipal waste. It is then deposited out of the atmosphere and can enter the food chain. Since the 1980s, mercury has continued to be detected in South Florida plants and animals, especially those, such as the Florida panther, at the top of the food chain. The park and SFRMC have actively monitored mercury in the environment since 1993. Mounting concern over water quality led to the passage in 1987 of Florida's Surface Water Improvement and Management (SWIM) Act. Under the act, a list of bodies of water of regional and state significance was established. Lake Okeechobee and the Everglades were declared waters of state significance.⁴⁹⁶ For each identified body of water, the appropriate water management district was required to develop a surface water improvement and management plan (SWIM plan).⁴⁹⁷

The United States Sues Florida over Water Quality

The preparation of the draft SWIM plan for Lake Okeechobee in 1988 provided an opening for sportsmen, environmentalists, and Park Service managers who were impatient with the meager progress being made on Everglades water quality. The park found the plan inadequate and was aware that the SFWMD was exceeding the water quality standards it had agreed to with the NPS. Superintendent Finley had been laying out his concerns over water pollution before the district's board, but had gotten nowhere. Among the many contacts he had made in Florida was Dexter Lehtinen, a Homestead native who was in the state legislature. Lehtinen was a rising star in the state Republican Party and was appointed acting U.S. Attorney for the Southern District of Florida in June 1988. That summer, Lehtinen phoned Finley and asked how he could help the Everglades. The attorney had already heard from sportsmen's groups about water pollution and Finley had had discussions with environmental groups about a lawsuit. Those groups, though, lacked the required standing to be plaintiffs. At a meeting in Miami's Firehouse Restaurant, Finley and Lehtinen decided to bring suit on behalf of the NPS and FWS against the state for violating its own water quality standards. Both knew they would never get permission from their bosses in Washington for such a suit, so agreed to proceed in secret. Lehtinen assigned a couple of attorneys to the case, and Finley consulted only with a couple of scientists from the park.⁴⁹⁸

Lehtinen and Finley wanted to file the action a few weeks before the November 8, 1988, presidential election that pitted Vice President George H. W. Bush against Massachusetts Governor Michael Dukakis. Bush was running as a protector of the environment,

⁴⁹⁶ For regulatory purposes, the Everglades was defined as Everglades National Park and the three WCAs.

⁴⁹⁷ Godfrey, 226–27; *C&SF Comp. Rev. Study*, Apr. 1999, 3–21; “Glades Fish All Called Unsafe; Mercury Taint Is Widespread,” *Miami Herald*, July 14, 1989; *Draft GMP*, 171.

⁴⁹⁸ Michael Finley, interview by author, Nov. 19, 2012; Joseph Browder, interview by author, Feb. 7, 2012.

attacking Dukakis for his failure to address pollution in Boston Harbor. Lehtinen and Finley believed it would be politically awkward for the Reagan/Bush administration to pull the plug on their environmental lawsuit in the middle of the campaign. Lehtinen filed the suit late on the afternoon of Friday, October 7, although it was not officially logged in until Tuesday, October 11, following the three-day Columbus Day weekend. That Friday, Superintendent Finley called NPS Director William Penn Mott and Governor Martinez, giving them their first notice of the legal action. Mott was privately enthusiastic though he could not be publicly, and Martinez was chagrined. Lehtinen and Finley appeared before a room full of media representatives, and the *Miami Herald* headlined, “U.S. Files Suit to Halt Everglades Pollution.”⁴⁹⁹

Plaintiffs in the lawsuit were Everglades National Park and the Arthur R. Marshall Loxahatchee National Wildlife Refuge (Loxahatchee NWR). The defendants, the SFWMD and the Florida Department of Environmental Regulation, were charged with violating Florida law by allowing water contaminated with nitrogen and phosphorous to flow onto federally protected land. Although Loxahatchee NWR Manager Burkett S. Neely Jr. did not know of the suit until it was filed, it was crucial to have the NWR as a plaintiff. The reserve is adjacent to the Everglades Agricultural Area, and nutrient pollution was much more severe there than in the park (Figure 9–7, U.S. Sugar Corporation refinery at Clewiston). The great paradox of the lawsuit was that the U.S. Army Corps of Engineers, which built the water control system under a mandate from Congress, could not be named as a defendant. Once the lawsuit was filed, Governor Martinez flew to Washington to press Reagan Attorney General Richard Thornburgh to withdraw the suit. Thornburgh replied that he would not undercut his subordinate and wished Martinez a pleasant flight home. Later that winter, Superintendent Finley in his previously noted fishing-boat meeting with the president-elect, convinced Mr. Bush not to withdraw the suit.⁵⁰⁰

⁴⁹⁹ Michael Finley, interview by author, Nov. 19, 2012; “U.S. Files Suit to Halt Everglades Pollution,” *Miami Herald*, Oct. 13, 1988; Godfrey, 279–81. When Finley got the governor on the line, he told him he had good news and bad news. When told that the bad news was that the U.S. had sued the state, Martinez asked what possible good news there could be. Finley replied that Martinez had not been named as defendant in the suit.

⁵⁰⁰ Michael Finley, interview by author, Nov. 19, 2012; Nathaniel Reed, interview by author, May 22, 2012; Godfrey, 281–82.



Figure 9–7, U.S. Sugar Corporation refinery at Clewiston

Environmental groups generally approved of the lawsuit, hoping it might serve to break the deadlock that seemed to prevail. Nathaniel Reed observed: “If it takes a federal court case or a hurricane, whatever (it takes) to remove some of the logjam, I’m for it.” More than anything, the suit was a lever that forced the state to take concrete steps to deliver on its vague assurances that it was protecting Florida’s waters. It also showed that the NPS was going to make its voice heard and insist on a place at the table.⁵⁰¹

The water quality action was assigned to U.S. District Judge William Hoeverler. Although the Department of Justice let the case go forward, it gave Lehtinen few resources to pursue it. The State of Florida, by contrast, spent millions on its defense. Judge Hoeverler allowed the Florida Sugar Cane League and other agricultural interests to enter the case as interveners, which had the effect of further extending the discovery process with document requests and depositions. Democrat Lawton Chiles, running for governor in 1990, promised to settle the lawsuit and make the Everglades his top environmental priority. Once in office, Chiles on May 20, 1991, appeared in Hoeverler’s courtroom. In a move that has entered the folklore of the Everglades, Chiles told the judge that the state was guilty and “surrendered his sword.” He said, “We want to surrender. We want to plead that the water is dirty. We want the water to be clean, and the question is how can we get it the quickest.” Negotiations commenced in earnest. Also in May, the Florida legislature passed the Marjory Stoneman Douglas Everglades Protection Act, which dealt with many of the same water quality issues. In July 1991, the U.S. Department of Justice, the SFWMD, and the Florida Department of

⁵⁰¹ “Reed: Everglades Suit May Be Blessing,” *Palm Beach Post*, Nov. 14, 1988; Nathaniel Reed to Gov. Bob Martinez, Oct. 17, 1988, NPR papers, box 1.

Environmental Regulation signed a settlement agreement. Judge Hoeveler ratified the agreement with a consent decree entered February 24, 1992.⁵⁰²

The settlement agreement largely provided a framework for improving water quality, but it established a number of important goals and contained several commitments by the state. In the agreement, the state and federal governments pledged to “guarantee [the] water quality and water quantity needed to preserve and restore the unique flora and fauna of the Park and the Refuge.” The state agreed to take such action as needed to ensure that the water entering the two federal areas would meet state water quality standards by July 1, 2002. The agreement set a year 2000 target for phosphorous concentrations in water entering the park’s Shark Slough at less than 13 part per billion (ppb) in a dry year and 8 ppb in a wet year. It is important to note that at the time the consent decree was entered, Florida had no legislatively established *numerical* water quality standards. The existing narrative standard stated that nutrient concentrations in Class III water would not “cause an imbalance in natural populations of aquatic flora or fauna.” The agreement also committed the state to the construction of 35,000 acres of stormwater treatment areas (STAs), meant to filter out phosphorous and other nutrients before water reached the WCAs. The state was also to institute a permit system for growers in the EAA. The growers would need to institute best management practices and adhere to phosphorous concentration standards before being granted a permit to discharge water to the STAs or WCAs. Additional provisions of the agreement established a research and monitoring program and implementation procedures. The settlement plan closely followed the provisions of the Marjory Stoneman Douglas Everglades Protection Act, but was more specific in some instances.⁵⁰³

⁵⁰² “Judge Signs Off on Glades Cleanup Deal,” *Miami Herald*, Feb. 25, 1992; *United States v. South Florida Water Management District*, 847 F. Supp. 1567 (S.D. FL 1992), later affirmed by 28 F.3d 1563 (11th Cir. 1994); Godfrey, 283–85. Michael Soukup was director of the SFRC in the early 1990s and heavily involved in the settlement discussions. He has observed that had Lehtinen moved for summary judgment in the case when Chiles surrendered, Judge Hoeveler might have agreed, saving a great deal of time and trouble.

⁵⁰³ Godfrey, 285–87; *United States v. SFWMD, et al.*, Case No. 88–1886-CIV-Hoeveler, http://www.law.miami.edu/library/everglades/litigation/usdc/88_1886/pleadings/settle_agreement; Godfrey, 192.

The Water Situation as of January 1993

At the time of Bill Clinton's inauguration as president in January 1993, this was the status of the fight to get the water right for Everglades National Park. The experimental water delivery program had achieved little, chiefly because of the flooding risk to private interests in the East Everglades. Land acquisition under the Everglades Protection and Expansion Act of 1989 was beginning, but controversy continued over the fate of the 8.5 Square Mile Area and the Frog Pond. Congress had not appropriated any funds for the Restudy, the thoroughgoing review of the Central and Southern Florida Project that it had mandated in late 1992. The water quality lawsuit had put that issue front and center, and many had high hopes for the process that was set in motion by the consent decree. The story of how these developments culminated in the December 2000 passage of the Comprehensive Everglades Restoration Plan is contained in Chapter 28



Wilderness on the Edge:
A History of Everglades National Park

Chapter 10:
Wilderness Values and Wilderness Designations

Chapter 10: Wilderness Values and Wilderness Designations

Much has been written over the years about the wilderness character of Everglades National Park. The NPS points with justifiable pride to section 4 of the 1934 Everglades authorizing act:

The said area shall be permanently reserved as a wilderness, and no development of the project or plan for the entertainment of visitors shall be undertaken which will interfere with the preservation intact of the unique flora and fauna and the essential primitive natural conditions now prevailing in the area.

Section 4 is the basis for the often-repeated assertion that Everglades was the first national park set aside for its biological values. As has been shown in Chapter 3, this language was not the NPS's idea but placed into the legislation by wilderness advocates outside the service. A number of motivations underpinned the emergence of a vocal wilderness protection movement in the early 1930s. This movement led to the inclusion of section 4 in the act and to the formation of the Wilderness Society less than a year after Everglades was authorized. As historian Paul Sutter has demonstrated, the major concern of wilderness proponents was that modern civilization, especially the motorcar, was compromising the nation's primitive or primeval natural areas. Dear to the heart of Robert Sterling Yard, Aldo Leopold, and the other Wilderness Society founders was guaranteeing the opportunity to experience a natural environment of solitude, quiet, and inspiration for a week or more at a time, with no intrusions from the modern world. In their conception, wilderness areas had to be relatively large and remote from highways and railways. This desire had strong aesthetic and spiritual aspects as well as romantic undertones of a person proving his mettle by being able to survive in the wild. The automobile and uncontrolled road building were seen as the greatest threats to this wilderness experience. The extensive program of road building and other development that the NPS was undertaking with CCC labor in the 1930s only added to the concerns of wilderness advocates.⁵⁰⁴

The idea of wilderness areas as biological preserves or laboratories for scientific inquiry was present in the thinking of wilderness advocates, but it was a minor note. As Sutter puts it, "ecological concerns were not a central causative agent or a major component in the [Wilderness Society] founders' definition of modern wilderness."⁵⁰⁵ The interest in biological preserves came largely from a different quarter: the second generation of American ecologists. As early as 1918, the Ecological Society of America formed a committee to look into setting aside public land as research reserves. Victor Shelford, the

⁵⁰⁴ Sutter, 241–42; John C. Miles, *Wilderness in National Parks: Playground or Preserve* (Seattle: University of Washington Press, 2009), 72–73.

⁵⁰⁵ Sutter, 14.

society's first president, in 1933 proposed a system of nature sanctuaries "containing unmodified assemblage[s] of organisms." These were to be set aside for scientific study; the largest and most unmodified (dubbed first class sanctuaries) would be off-limits to visitors without scientific or educational goals. These sanctuaries would allow scientists to study natural processes and also serve as controls—places where ecological forces could operate largely uninfluenced by humans—making it easier to track and evaluate changes elsewhere. While the wilderness advocates largely sought to set aside areas for a special kind of visitor experience, the ecologists wanted sanctuaries for scientific study. The wilderness advocates, however, were more numerous and better organized. In the 1930s, ecology was a young science, and its insights had barely penetrated the thinking of leaders of major conservation organizations.⁵⁰⁶

In general, the NPS in this period saw no need to specifically define wilderness areas in parks for any reason, inspirational or scientific. The service took a stance that can be characterized as wilderness by default; any areas not developed for visitor use or park administration constituted wilderness. The NPS saw this position as fully consonant with the mandate in the 1916 Organic Act to leave areas unimpaired for future generations. This approach left the service free to extend development into virtually any park area if its needs changed. An ecologically based approach to development, although hinted at in the views of scientists in the early 1930s, would only begin to gain ground in the 1970s. Under this approach, large natural areas would first be carefully studied to determine the habitat needs of species and the sizes of viable ecosystems, and only after that would development plans be made. Development then would more likely avoid damaging natural processes. As ecology advanced as a science and pressure built to enact a national wilderness act, the NPS gradually moved away from its wilderness-by-default position and came to accept that wilderness areas needed more positive protection and more active management to prevent their degradation.⁵⁰⁷

In developing Everglades, the NPS largely applied its long-standing wilderness-by-default policies. It did not ignore the wilderness mandate in the authorizing act, but accommodating the motorized visitor was the main determinant in its decisions concerning the route of the main park road and development at Flamingo. The NPS was also under strong pressure from state officials and tourist interests to develop the park rapidly. Even if it had possessed the resources and the will, it did not have the luxury of waiting for wildlife studies in advance of park development. Park managers relied heavily on the argument that the vast majority of Everglades National Park would be preserved as wilderness solely as a result of the difficulty of access. NPS wildlife

⁵⁰⁶ Miles, 61–62; Victor Shelford, "The Preservation of Natural Biotic Communities," *Ecology* 14, no. 2 (April 1933): 240–45.

⁵⁰⁷ Miles, 35, 53, 65, 81. There are minor exceptions to this broad picture. In 1927, the NPS designated a seven-square-mile portion of Yosemite National Park as a research reserve. Miles, 61.

biologist George Wright made this argument as early as 1931, before Everglades had been authorized.⁵⁰⁸ During Mission 66, the NPS argued that carefully planned development actually helped to preserve wilderness values. Associate Director Hillary Tolson expressed this view in 1960:

It is basic in our management of the Parks and preservation of their wilderness that reasonable access be provided for the public. We believe that the Flamingo development meets this situation and that a well designed developed area such as this is an aid to protection.⁵⁰⁹

As swamp buggies, airboats, and inexpensive outboard motors became increasingly common, the wilderness-by-default argument became harder to maintain. Leading national conservation organizations also began leaning harder on the service to revise its wilderness policies.

The 1964 Wilderness Act

Everglades National Park was developed during the very years that conservationists, led by Howard Zahniser of the Wilderness Society, were pressing Congress to establish a national wilderness preservation system across all federal lands. After World War II, the Wilderness Society, the Sierra Club, and the National Parks Association increasingly coordinated their activities. The Sierra Club began a series of biennial wilderness conferences in 1949. These conference brought agency land managers and conservationists together to discuss a wide range of wilderness issues. From these meetings emerged the first version of a wilderness act, largely drafted by Zahniser and introduced in Congress in 1957. Seeing the act as a threat to its administrative authority and prerogatives, the NPS under Director Conrad Wirth fought to exclude the service from its provisions, although a few in the service quietly supported it from the beginning. In addition, the service in the 1950s was preoccupied with its ambitious Mission 66 building program. At the heart of Mission 66 was the idea that accommodating visitors came first, and areas not needed for development amounted to “wilderness by default.” It took some time to build support in Congress for the act, and some changes were negotiated as earlier versions went down in defeat. The endorsement of President Kennedy and his Secretary of the Interior Stuart Udall changed the political equation, and

⁵⁰⁸ Wright noted, “The visitor . . . will be absolutely confined to the roads and the developed areas. . . . These are the reasons, then, why it seems to us that a park, if established, could be opened up so as to make adequate provision for the appreciation of the Everglades . . . and still further conservation of the unique flora and fauna to the utmost.” George M. Wright to Ernest F. Coe, Oct. 9, 1931, SLH papers.

⁵⁰⁹ Assoc. Dir. Hillary Tolson to Mrs. George P. Milmine, Dec. 2, 1960, NARA Ph, RG 79, 79-66-A-661.

President Johnson signed the Wilderness Act into law in September 1964. By this point, the act had the reluctant support of the NPS.⁵¹⁰

The Wilderness Act created the National Wilderness Preservation System. It defined wilderness and prohibited certain uses within wilderness areas. The act defined wilderness as:

an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation.

The act banned permanent roads and motorized vehicles, including motorboats, from wilderness areas. It directed the Secretary of the Interior to evaluate all roadless areas of 5,000 acres or more in units of the National Park System within ten years of the act's passage. The secretary was then to recommend to the president those areas deemed suitable for designation as wilderness. Each proposed designation was to be advertised in the Federal Register, with one or more public hearings held before the recommendation was put in final form. The president was then to forward Interior's wilderness proposals to Congress; Congress made the final decisions on what was added to the Wilderness Preservation System. Further, congressional action was needed to remove federal acreage from the wilderness system.⁵¹¹

The NPS understood that the 1964 act required a complete revamping of its approach to wilderness. Under the 1964 act, the NPS for the first time had a prescribed definition of wilderness to apply and a mandate to designate wilderness. Once designated, wilderness areas would no longer be available for development and many other park purposes. In essence, the NPS was losing its ability to vaguely consider most of a park wilderness until it needed a particular tract for another purpose.⁵¹²

As a number of historians have shown, the NPS was slow in fulfilling its mandate under the act. Its task was large; some fifty-seven units within the system had roadless areas of 5,000 acres or more, and each would have to be studied. The delays were also partly a result of cumbersome procedures, bureaucratic inertia, and the NPS's initial insistence

⁵¹⁰ Miles, 120–26, 151–56; Mark W. T. Harvey, *Wilderness Forever: Howard Zahniser and the Path to the Wilderness Act* (Seattle: University of Washington Press, 2005), 189–90, 204–209.

⁵¹¹ Wilderness Act, P. L. 88–577, Sept. 3, 1964. Since the act's passage, historians, led by William Cronon, have shown how problematic it can be to define wilderness as something apart from humans, especially as we learn more about the extensive management of landscapes by Native Americans before Europeans set foot in the Americas. An exploration of these contradictions is beyond the scope of this park history, but the reader should bear in mind that wilderness is a contested term.

⁵¹² Miles, 51.

that wilderness reviews be coordinated with the master planning process in each park. Master plans in this period typically required two to three years to complete. The change from a Democratic to a Republican administration in January 1969 also slowed things down, because new political appointees in the DOI wanted to review existing wilderness studies. Still, it was clear that the NPS moved very slowly because it understood that a congressional designation was permanent and would limit its managerial discretion. Groups, such as the Sierra Club and the Wilderness Society criticized the service's first attempts to set guidelines for wilderness reviews, in particular its intention to place large "buffer zones" around developed areas and roads. Early draft wilderness reviews, for example, placed wilderness boundaries as much as a mile away from park roads, creating large buffers that were outside of the wilderness. A scathing article in the Spring 1970 issue of *Living Wilderness* and pressure from Congress caused the agency to move a bit faster.⁵¹³ Wilderness recommendations began to emerge from the DOI, and Congress made the first designations of NPS wilderness in October 1970, six years after the passage of the Wilderness Act.⁵¹⁴

Designating Park Wilderness

Early internal discussions on designating wilderness areas in Everglades National Park are not well documented. The NPS formed an Everglades National Park Wilderness Study Team in late 1966, but no recommendations from this group have been located. A year later, in December 1967, The Wilderness Society held a two-day "Wilderness Workshop on Everglades National Park" in South Florida. NPS staff and representatives of the Florida Audubon Society and other interested groups attended. Topics under discussion included how much of a buffer to provide along roads and around developed areas, such as Flamingo, how close to the park boundary the wilderness boundary should be, and whether areas that might be developed in the future should be excluded from wilderness. At this early stage, buffers of a one-half mile to a mile on each side of the main road were under consideration. Another concern was the easy access by motorboat to many areas of the park. Park collaborator Frank C. Craighead noted that "This Park will be difficult to classify into the standards set up for Wilderness Areas. It is [so] readily accessible through many waterways that isolation of any sizable part will be a real problem." Most workshop participants urged that large wilderness areas be established so as to prevent any future park development beyond areas already affected.⁵¹⁵

⁵¹³ Sellars, 211, 280; Ernest M. Dickerman, "The National Park Wilderness Reviews (Lost in the Wilderness)," *Living Wilderness* 34, no. 100 (Spring 1970):40–49.

⁵¹⁴ The designations were in Petrified Forest National Park, Arizona, and Craters of the Moon National Monument, Idaho, Oct. 23, 1973. An Act to Designate Certain Lands as Wilderness, P.L. 91–504, Oct. 23, 1970.

⁵¹⁵ Ernest M. Dickerman, TWS, to Stewart M. Brandberg, Exec. Dir, TWS, Nov. 4, 1967, Discussion Points for Wilderness Workshop on Everglades National Park, Dec. 16–17, 1967, Frank C. Craighead to Stewart M. Brandberg, TWS, Sept. 28, 1967, TWS papers.

Following the workshop, wilderness designation fell lower on the priority list for a couple of years while park managers focused on fighting the jetport in the Big Cypress Swamp (see Chapter 9). Believing the NPS was laggard in designating wilderness and seeking less development in the parks, the National Parks & Conservation Association (NPCA) commissioned several independent wilderness plans. In early 1970, the association had land use planning consultant William J. Hart prepare a wilderness plan for Everglades. Hart believed that the vast majority of the park should be wilderness, with only roads and developed areas excluded. He wanted Florida Bay included, subject to somewhat relaxed standards. Acknowledging that motorboats would have to be allowed in the bay, Hart believed that damage to natural values could be limited by strict controls, including restricting larger motorboats to specified dredged channels. Along the Gulf Coast, he recommended that motorboats be allowed to penetrate only to specified access points, with inland waters largely reserved for nonmotorized craft. In transmitting Hart's plan to Director Hartzog, NPCA President Anthony Wayne Smith noted that the 1965 version of the park's master plan included considerably more development than the association considered appropriate. He saw an expansive wilderness designation as an ideal way to prevent excessive development.⁵¹⁶

Between 1972 and 1974, the NPS rushed to complete its wilderness reviews by September 1974, as the act required. In August 1972, the service produced a preliminary draft of a wilderness study for Everglades. Minor changes were made to this draft before it was printed and distributed in January 1974. The study proposed two wilderness areas aggregating 764,700 acres, 54 percent of the park. One unit of 616,000 acres embraced almost the entire park west and north of the main road; a second unit of 148,700 acres embraced much of the area east and south of the road. Some 140 miles of park road and all developed areas were excluded from wilderness, including almost all of Long Pine Key. Included in unit 2 were all of the keys in Florida Bay, but the bay itself was not included. Almost all of the large bodies of water and navigable passages on the Gulf side were excluded from wilderness. Slated for use by motorless boats only were several lakes—Long, Cuthbert, Henry, Little Henry, the Lungs, Monroe, Middle, and Seven Palms—and some streams entering Florida Bay, such as Taylor River and McCormick, Davis, East, and Mud Creeks. Because motor roads are not allowed in wilderness, the study called for management roads between Flamingo and Snake Bight and from Flamingo to Lake Ingraham to be converted to trails. The wilderness boundary was set 300 feet from the center line of major roads within the park and 150 feet from the center line of lesser roads. This was considerably closer than in some of the preliminary planning which contemplated road buffers of one-half mile or even a full mile from the center line. The study identified 84,700 acres of potential wilderness. The potential

⁵¹⁶ Anthony Wayne Smith, president, NPCA, to Dir. Hartzog, Feb. 24, 1970, HFC; "The NPCA Wilderness Plan Series," *National Parks Magazine*, Sept. 1971, 29. Ideas about limiting motorboat access in Florida Bay would reemerge in the discussions surrounding the park's general management plan (see Chapter 26).

wilderness included portions of the northwest extension still subject to retained mineral rights and inholdings in the Hole-in-the-Donut that were in the process of being added to the park. Joe Bay and Little Madeira Bay were identified as potential wilderness because they were still open to commercial fishing. It was the park's intention to make them wilderness if commercial fishing ended in future.⁵¹⁷

The park held public hearings on the wilderness proposal in Homestead and Naples in late May 1974. In presenting the study, Superintendent Jack Stark emphasized that the plan “would have little impact on the typical visitor . . . as the areas most frequented by visitors are not placed in wilderness.” Some 200 people attended the hearings and the park received a total of 1,857 oral and written comments. Environmental groups strongly supported the proposal; most of them, led by the Wilderness Society, urged that the seabed of Florida Bay be added to the wilderness and that much of the potential wilderness, Joe Bay and Little Madeira Bay in particular, be added to the designation. Commercial fishermen, some sports fishermen, and some motorboating groups thought the plan was too restrictive. Most objections centered on the waters that were to be closed to motorboats. Some long-time local users saw the restrictions as favoring an elite group of visitors. As Captain Jack Glassmyer put it: “I contend if you close these areas to motorboats you will be in effect actually closing them to almost all the people.” Following the hearings, Gary Soucie of the Wilderness Society remarked, “Why it has taken the National Park Service so long to prepare a wilderness proposal for an essentially wilderness park must remain something of a mystery to me,” but he was delighted that the proposal was moving forward.⁵¹⁸

The NPS revised its proposal in the wake of the hearings. After some discussions with the state of Florida, it decided that it could make the submerged lands of Florida Bay part of the wilderness while excluding the water column above them, thus not interfering with the long-established use of the bay by motorboaters. Florida Bay's bed became wilderness unit 4. The submerged lands of Joe Bay and Little Madeira Bay were included in unit 4, thus removing them from the potential wilderness category. The other major change was the addition of 2,400 acres of pine upland on Long Pine Key as wilderness unit 3. This required the conversion of two automobile nature trail loops to a bicycling/hiking trail. The service prepared an environmental impact statement (EIS) to accompany the plan and published its revised recommendation in August 1974. It

⁵¹⁷ NPS, *Wilderness Study, Everglades National Park*, Preliminary Draft, Aug. 1972, HFC; NPS, *Preliminary Wilderness Study, Everglades National Park* (Denver: NPS DCS, January 1974); Jack Stark, “One Voice,” *The Florida Naturalist*, June 1974, 22–23.

⁵¹⁸ 38 Fed. Reg. 13566 (Apr. 15, 1974); Jack Stark, Statement on Wilderness Study, Apr. 1974, EVER 22965; “Anglers Tell Glades Planner Plan Would Cast People Out,” *Miami Herald*, May 9, 1974; Transcript of Hearing on Wilderness Proposal, ENP, May 23, 1974, EVER 42242, ser. XIII; Gary A. Soucie, TWS, to David D. Thompson Jr., RDSE, May 30, 1974, TWS papers; NPS, *Wilderness Recommendation, Everglades National Park* (Washington, DC: GPO, Aug. 1974).

proposed four wilderness units, totaling 1,296,500 acres, nearly 93 percent of the park (figure 10–1, Everglades Wilderness Areas). These were the units:

- Unit 1 148,700 acres—Taylor Slough drainage and keys
- Unit 2 616,000 acres—The Ten Thousand Islands, Whitewater Bay
- Unit 3 2,400 acres—Pinelands
- Unit 4 529,300—submerged marine lands.⁵¹⁹

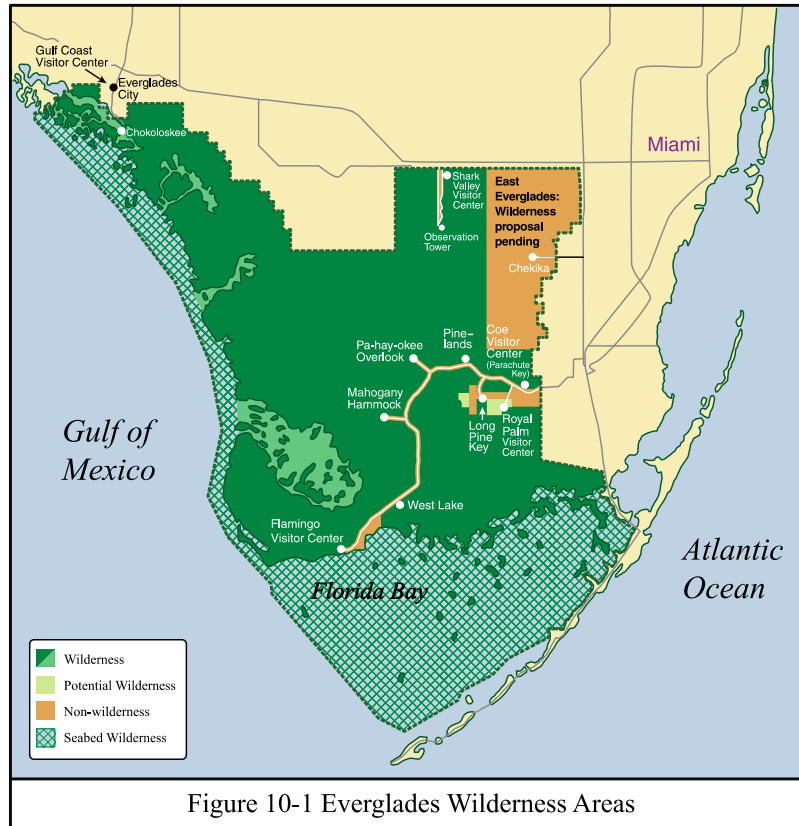


Figure 10-1 Everglades Wilderness Areas

⁵¹⁹ NPS, *Wilderness Recommendation*.

Interior forwarded the Everglades wilderness proposal to the president on September 21, 1974, who passed it on to Congress without changes. Because so many recommendations went to Congress toward the end of the ten-year period, a backlog was created. Everglades missed a 1976 omnibus bill but was included with eleven long-pending wilderness designations in another omnibus bill, the National Parks and Recreation Act of 1978 (see Appendix A).⁵²⁰ In reporting the bill out, the House Committee on Interior and Insular Affairs directed the secretary of the interior to look into the effects on wildlife of motorboat access to wilderness areas on the park's west side.⁵²¹ No evidence has been found that this study was ever completed.

Richard Ring, Everglades superintendent from 1992 to 2000, believed that naming the Everglades wilderness for Marjory Stoneman Douglas would be a fitting honor. He had his policy aide, Brien Culhane, work with the WASO legislative branch on drafting legislation. In 1997, Congress redesignated the Everglades wilderness as the Marjory Stoneman Douglas Wilderness to “commemorate the vision and leadership shown by Mrs. Douglas in the protection of the Everglades and the establishment of the Everglades National Park” (see Appendix A).⁵²² At the time, Douglas was 106 years old and largely confined to her bed. Sandy Dayhoff, park education coordinator, visited Douglas at her home to tell her of this honor. As Dayhoff puts it, “It was a very emotional thing for Marjory. She said, ‘Oh my, oh my!’ It was wonderful that before she passed, she got to hear that—she understood what had been done for her.”⁵²³

⁵²⁰ Omnibus bills for the NPS were an innovation of Congressman Phillip Burton (D-California). By combining many new authorizations, boundary changes, and base funding increases affecting dozens of congressional districts in a single bill, Burton assured broad support.

⁵²¹ Acting Asst. Secy., DOI, to President, Sept. 24, 1974, TWS papers; P. L. 95–625 (92 Stat. 3470), Nov. 10, 1978; House Subcommittee on National Parks and Insular Affairs, *Legislative History of the National Parks and Recreation Act of 1978*, Dec. 1978; H.R. Report 95–1165 (1978), 73–74.

⁵²² Sec. 3, Marjory Stoneman Douglas Wilderness and Ernest F. Coe Visitor Center Designation Act, P. L. 105–82, Nov. 13, 1997. It takes nothing away from Douglas's tireless efforts on behalf of the Everglades from the late 1960s on to point out that her role in the *establishment* of the park was slight.

⁵²³ Marjory Stoneman Douglas Wilderness and Ernest F. Coe Visitor Center Designation Act, P. L. 105–82 (111 Stat. 1541), 1997; Sandy Dayhoff, interview by author, Jan. 24, 2012.

Wilderness Evaluation of the East Everglades Addition

With the addition of the East Everglades, the park was required to do a wilderness study for the 109,506 acres added to the park. In 2006, the East Everglades wilderness study was folded into the park's general management plan (GMP) process, the public scoping for which began in 2002 (see Chapter 27). The park's initial assessment was that about 106,000 acres (97 percent) of the East Everglades addition were suitable for designation as wilderness or potential wilderness. Areas excluded from consideration as wilderness were the Chekika developed area, developed areas (including airboat operations) along the Tamiami Trail, and some roads. As planning proceeded, it became clear that Congress's intent was for private and commercial airboat operations to continue in the East Everglades. Because airboats are incompatible with wilderness values, areas where they operated were excluded from wilderness consideration. The preferred alternative in the park's draft GMP calls for 80,100 acres to be declared wilderness. Another 9,900 acres would be potential wilderness, to be designated wilderness when incompatible uses end. The remaining 19,500 acres are proposed as frontcountry. About 12,000 of these acres are in the northwestern portion of the addition, where the long-standing use of airboats would continue (see Chapter 23). Once the GMP is approved, a wilderness recommendation for the East Everglades will be developed for ultimate action by Congress.⁵²⁴

⁵²⁴ NPS, *Everglades National Park General Management Plan/East Everglades Wilderness Study Newsletter 4*, May 2007, <http://www.nps.gov/ever/parkmgmt/upload/GMP%20news4.pdf>; *Draft GMP*, 85–86, 164.

Managing Wilderness

When Congress established the Everglades wilderness in 1978, the park created a backcountry management function within the resource management division. Resource management then took the lead in developing a backcountry management plan (BMP). Approved in 1981, the plan was prepared by Backcountry Management Technician Jonathan Poynter and Resource Management Specialist James Holland. The BMP devoted some attention to administrative use of the backcountry (fire management, law enforcement, scientific research, and resource management), but it focused primarily on visitor use of the backcountry. The plan stated: “The overriding management objective is to provide the visitor with a variety of wilderness experiences without incurring significant resource deterioration.” The plan referenced the National Environmental Policy Act of 1969, but NPS policies in 1981 did not require the preparation of an environmental assessment or environmental impact statement in conjunction with the BMP. The plan omitted a number of features that would today be required in a wilderness management plan. It did not, for example, include a statement of desired future condition or provide much detail on how impacts on wilderness would be monitored and evaluated. It depended on the existing resource management function, stating that resource management “will work with each district ranger in monitoring and evaluating the impacts of the backcountry program as it affects visitors, endangered species, and the park resources.” It seems clear that “backcountry program” largely meant backcountry visitor use.⁵²⁵

Regarding administrative uses, the plan recognized that airboats and helicopters were often needed for park staff to carry out their duties and cited NPS policy that such use would be allowed only when “necessary to meet the minimum needs of management to achieve the purpose of the area.” All administrative use of motorized vehicles in the Everglades backcountry, except for emergency law enforcement, search and rescue, and fire suppression, would require prior approval. Each park division was to include information on any projects requiring such use in its annual budget plan. Approval by the superintendent of the programs in the budget plans constituted approval of the use of motorized vehicles.⁵²⁶

Over the years, park managers have worked to balance appropriate visitor access and enjoyment with wilderness preservation. The park banned glades buggies and airboats from the park in 1949. In 1955, the service prohibited reckless boat operation and established a 40 mph speed limit for motorboats. In 1994, before the NPS had a national

⁵²⁵ Everglades Backcountry Use and Policy, ca. 1985, EVER 42242, Ser. VI, Subser. A, Subser. 2; Everglades National Park, *Backcountry Management Plan*, July 1981, 1, 6.

⁵²⁶ ENP, *Backcountry Management Plan*, 24, 29.

policy, the park instituted a ban on personal watercraft in park waters. An important measure included in the park's draft GMP is the creation of a poll-and-troll zone in approximately one-third of Florida Bay. In this zone, all boat motors except small trolling motors would be banned, in order to enhance wilderness values.⁵²⁷

In the late 1980s, park managers decided that it was time to begin work on a true wilderness management plan, and a committee was formed to work on one. It quickly became apparent that the scoping and preparation of such a plan, including coordinating public involvement, was a huge task. The group did not complete a plan but evolved into a body that met periodically, largely to look at proposed activity in the wilderness. This became known as the park wilderness committee. The committee largely relied on the EIS prepared in the 1970s at the time of the wilderness designation, service-wide wilderness policies, and the 1981 BMP. The wilderness committee has representatives from several park divisions and currently meets monthly. Traditionally it has been chaired by the chief ranger or another member of the Resource and Visitor Protection Division. The committee applies "minimum requirements" analysis, a two-step process that first determines whether an action is appropriate or necessary, including whether it can be accomplished elsewhere than in park wilderness. If the action meets that test, the committee goes on to decide whether the tools, equipment, and methods proposed are the minimum necessary to achieve the management objective and are the least damaging to wilderness values.⁵²⁸

With the park at the center of the world's largest ecosystem restoration effort, there has been a substantial increase in the number of research and monitoring projects taking place in park wilderness. Former Superintendent Dan Kimball has described the park as a giant research platform. Many projects require the placement of equipment in wilderness, which then must be accessed and should be removed at the project's end. Traditionally, the park's backcountry has been accessed by airboat and helicopter, and many research projects are planned with their use assumed. In consequence, there are five to six thousand helicopter landings in park wilderness annually, primarily connected with research and monitoring, but also for maintenance, visitor protection, and resource management. Frequently, a project is planned and budgeted to be accomplished with airboats or helicopters. In its review, the wilderness committee may decide that the project can be accomplished with less use of mechanized equipment, but that would be incompatible with the funding and time schedule built into the project. This can put the committee in the awkward position of recommending changes that could hamstring or

⁵²⁷ 14 Fed. Reg. 3748 (July 7, 1949); 20 Fed. Reg. 2663 (Apr. 21, 1955); 59 Fed. Reg. 58,781- 58,786 (Nov. 15, 1994); *Draft GMP*, 69.

⁵²⁸ Skip Snow, interview with author, Oct. 5, 2011; Chapter 6: Wilderness Preservation and Management, *National Park Service Management Policy*, 2006; Operations Evaluation Report, ENP, Apr. 24, 1987, EVER-00470; Skip Snow, personal communication, Oct. 23, 2012; Fred Herling, personal communication, Feb. 11, 2011; Jimi Sadle, personal communication, Oct. 20, 2014.

kill the project. Some park managers and researchers believe that the wilderness committee is overzealous in protecting wilderness values, while some committee members believe the park could do a better job of factoring wilderness impacts into the early planning for projects.⁵²⁹

The use of mechanized equipment for maintenance in wilderness is another issue that the wilderness committee grapples with. For example, the Coastal Prairie Trail has traditionally been kept clear using power mowers. As a demonstration, members of the wilderness committee themselves used hand tools to clear a portion of the trail. Maintenance continues to believe that power mowing is necessary. In another instance, committee members poled and pushed an empty airboat shell into Shark Valley to remove some research equipment, showing that an airboat was not required. Often, of course, using nonmechanized methods requires more staff time than using mechanized equipment, and the park is chronically short-staffed and underfunded. The wilderness committee is sensitive to these economic factors and includes them in its analyses, but NPS policy makes the protection of wilderness values the committee's paramount concern.⁵³⁰

The widespread adoption of cell phones in recent decades has raised questions about the use of these devices in park wilderness. The park erected a microwave tower at Flamingo in 1991, and AT&T established cell phone coverage from that tower some time thereafter. In 2009, Verizon initiated a request to establish service from a tower near the Robertson Building that the park plans to erect for its own internal communications. Cell phone coverage along most of the main park road is nonexistent or spotty, and there is general consensus within the park that the road should have continuous coverage for reasons of health and safety. Coverage cannot be confined only to nonwilderness, and there would be some bleed over of coverage into wilderness areas from the installation at Robertson. This is of concern for some staff members in that it might cause certain visitors to become overconfident in wilderness, on the assumption that they could “phone their way out” of trouble. A decision on the Verizon request is pending at this time.⁵³¹

The park's draft GMP includes statements of desired conditions in park wilderness, notably that: “In designated wilderness, natural and cultural resource management activities and research and other administrative uses are consistent with NPS wilderness management policies.” The document also reaffirms the park's commitment to the minimum requirements concept. To help achieve the goals for designated wilderness, the GMP commits the park to developing a wilderness stewardship plan “to guide preservation, management, and use of

⁵²⁹ Brien Culhane, personal communication, Sept. 25, 2013; Oron Bass, personal communication, Oct. 29, 2013; Dan Kimball, personal communication, Oct. 15, 2014; Jimi Sadle, personal communication, Oct. 20, 2014.

⁵³⁰ Jimi Sadle, personal communication, Oct. 20, 2014.

⁵³¹ Dan Kimball, personal communication Oct. 15, 2014; Jimi Sadle, personal communication, Oct. 20, 2014; Michael Jester, personal communication, Oct. 20, 2014.

these lands.” A wilderness stewardship plan would be a step forward in more firmly establishing park policy on wilderness and would give the wilderness committee something concrete to rely on in its determinations. The development of the plan will depend on future allocations of funding and professional positions in the park. There also seems to be a consensus within the park that members of the wilderness committee and others in the park need thorough wilderness training.⁵³²

Visitor Use of Wilderness/Backcountry Camping

Well before the 1978 designation of park wilderness, Everglades had begun to develop wilderness or backcountry campsites. The first two, at Graveyard Creek and the Cane Patch, were opened in the winter of 1962/63. By 1970, the number had grown to twenty-five sites, and at this writing there are forty-six (figure 10–2, Lopez River backcountry campsite). Most of the sites can be reached only by canoe, kayak, or small motorboat. The Ernest F. Coe and Old Ingraham Campsites and the Clubhouse Beach Campsite at the end of the Coastal Prairie are accessible on foot. Several factors influenced the choice of sites. Because nearly all areas of higher ground along the Gulf Coast had attracted human settlement for millennia, it was inevitable that most locations selected for campsites contained the remnants of historic structures or prehistoric archeological resources. Some consideration was given to limiting damage to natural resources, but sites also had to be accessible to maintenance crews in motor barges. No effort was made to avoid sites with remains of white settlement, such as cisterns. To supplement the limited number of areas of higher ground, the park began a program of creating camping platforms on pilings, protected by traditional chickees, open-sided structures with thatched palm roofs. This gave managers considerably more flexibility in locating campsites. In the 1960s, the chickee sites were meant to accommodate a single camping party and were equipped with picnic tables and cookstoves. Regulations were put in place prohibiting the cutting of vegetation for fires, restricting fires on beach sites to below the high tide line, and requiring refuse to be packed out.⁵³³

⁵³² *Draft GMP*, Appendix D, 524; Fred Herling, personal communication, Feb. 11, 2011, and Aug. 22, 2013; Dan Kimball, personal communication, Oct. 15, 2014; Jimi Sadle, personal communication, Oct. 20, 2014.

⁵³³ Jack B. Dodd, Asst. Supt., to Ranger Maxwell et al., Aug. 8, 1962, Everglades National Park, “Notice to Back Country Visitors,” May 1970, EVER 42242, ser. XIII; Northwest District Issues and Goals for the 1995 Squad Retreat, 1995, EVER-00886.



Figure 10–2, Lopez River backcountry campsite

Interest in backcountry camping grew substantially in the late 1970s and 1980s, and the park took steps to handle more visitors while still protecting its resources. Use of the sites was estimated at 8,000 overnight stays in 1980. A voluntary permit system, begun in 1977, was made mandatory in 1983, in part to provide better data on campsite use. Campers could self-register until 1989, when the park began to require application be made to a park employee in the winter season and in summer as well, when staff was available. Because of overcrowding, the park occasionally allowed camping at nondesignated sites. To accommodate more camping parties, the park in 1983 began removing picnic tables at all chickee sites and adding a second chickee at some sites. Recorded overnight stays were 15,469 in 1987, no doubt an undercount because some parties did not get the required permit. The park experimented with placing limits of two nights or a single night at some popular sites. Over time, policy moved toward its current contours, where permits must be obtained at either Everglades City or Flamingo no more than 24 hours in advance of a visit. Permits are limited to 14 days, with restrictions ranging from one to three nights at a single campsite in the winter season. Reservations are made for a particular campsite; an alternate campsite can be used only in case of an emergency (figure 10–3, Indian Key backcountry campsite). For many years there was no charge for backcountry camping; as of this writing there is a \$10 processing fee and a \$2 per person per night charge.⁵³⁴

⁵³⁴ Jonathan Poynter, Backcountry Management Technician, ENP, to Jennifer L. Walker, Geography Dept., Northern Michigan University, Dec. 26, 1980, Everglades Backcountry Use and Policy, ca. 1985, EVER 42242, ser. XIII; SAR 1987; ENP Statement for Interpretation, 1995, EVER-00619; Everglades National Park Wilderness Trip Planner, http://www.nps.gov/ever/upload/Wilderness_Trip_Planner_2009.pdf.



Figure 10-3, Indian Key backcountry campsite

The Wilderness Waterway

Much of the backcountry use at the park is via marked canoe trails starting at Flamingo or Everglades and along the Wilderness Waterway. The park had two marked canoe trails in the mangrove forest as early as September 1967 and five marked trails in the Flamingo area by 1977: Bear Lake, Hells Bay, Noble Hammock, West Lake and Nine-Mile Pond. The Wilderness Waterway is a ninety-nine-mile trail that traverses inland waterways between Everglades City and Flamingo. It was opened in 1968 and has proven tremendously popular.⁵³⁵

Native Americans for millennia had been using and improving sheltered inland water passages in the Everglades. They also created canals to improve water transportation, notably the park's Mud Lake Canal. A substantial inland route for boaters had been a goal of park managers since shortly after the park's establishment, but nearly impassable mangrove forests at several spots seemed an insurmountable obstacle. Richard Stokes, who in 1959 became district ranger for the Gulf Coast District, based at Everglades City, thought otherwise. In the early 1960s, he and other park staff cleared routes through bottlenecks at Alligator and Plate Creeks. There remained a major blockage between Broad Creek and Harney River. Using early charts of the area known as T-charts, Stokes in 1966 began to search for a route. His first effort in August 1966 in the company of Superintendent Roger Allin and Chief Ranger Robert Kerr ended with Stokes and Allin swimming down Broad Creek in life jackets before they were spotted by Ralph Miele in the park plane and rescued after dark. Stokes kept trying (without the superintendent) and by the end of summer 1968, had cleared a connection. The park then began to mark the ninety-nine-mile route and add backcountry campsites so a canoeist could make the trip in seven to ten days (figure 10-4, Wilderness Waterway).⁵³⁶

⁵³⁵ *Anhinga*, Sept. 1967; Chief of Maintenance, ENP, to Supt., Jan. 27, 1977, EVER 22965.

⁵³⁶ Richard A. Stokes, ENP, to various media, Dec. 12, 1966; Max Hunn, "Everglades Waterway," *Outdoors* 2, no. 1 (Jan. 1970), 32. Stokes wrote that early on Supt. Beard planned to dredge a canal between the upper Shark River and Broad River drainages, but no documentation has been found in support of this.



Figure 10-4 Everglades Wilderness Waterway

An important part of making the Wilderness Waterway known to visitors was the 1969 publication of the *Guide to the Wilderness Waterway*, written by ranger William Truesdell. Truesdell came to the Everglades in 1967 and soon began preparing “strip maps of the entire waterway, section by section, and writing text to accompany the maps.” The narrative “described critical places in the route” and gave background on the natural and cultural history of the territory traversed. The sixty-four-page spiral-bound guide was published through the Everglades Natural History Association partnership with the University of Miami Press; a revised edition was published in 1985. The outdoors community greeted the opening of the waterway with enthusiasm and it received considerable media attention. The Wilderness Waterway has proved enduringly popular. In 2011, Holly Genzen and Anne McCrary Sullivan produced a new guide to the waterway, *Paddling the Everglades Wilderness Waterway*, which also provides information on previous human use of the areas traversed (figure 10–5, canoeing in backcountry).⁵³⁷

⁵³⁷ Holly Genzen and Anne McCrary Sullivan, *Paddling the Everglades Wilderness Waterway* (Birmingham, AL: Menasha Ridge Press, 2011), 29–32; Hunn, 30–34; “Boaters’ Discovery: Wilderness Waters,” *Broward Today*, Mar. 8, 1970.



Figure 10-5, canoeing in backcountry

From its inception in 1968, the park's Wilderness Waterway has been shared by operators of nonmotorized canoes and kayaks and operators of small boats with outboard motors. Widely held definitions of the wilderness experience find the sounds and odors of outboard motors incompatible with that experience. Long-time park volunteer John Buckley believes that canoers coming to the park to use the Wilderness Waterway are often disappointed when they find it is open to motorized boats. In the public meetings conducted to help shape the park's GMP, some users expressed a wish that motorized and nonmotorized users could be separated. The preferred alternative in the latest version of the park's GMP calls for the establishment of an Alternative Wilderness Waterway that would offer a more tranquil visitor experience for users of human-propelled craft. The alternative route would incorporate the existing Hells Bay Canoe Trail at its southern end and have its northern end at Everglades City. Most of the route of the Alternative Wilderness Waterway would also receive limited use by motorized boats. Some sections of the alternative route would be restricted to nonmotorized craft where parallel routes for motorized craft exist. The Alternative Wilderness Waterway would have fewer physical markers so as not to compromise views of the scenery and would have GPS waypoints.⁵³⁸

⁵³⁸ John Buckley, interview with Nancy Russell and Alan Scott, March 19, 2011; NPS, *Draft GMP*, 74.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 11:
Park Science

Chapter 11: Park Science

The management of a park's natural resources and a park's scientific activities are closely linked. Although it is now almost axiomatic that any program of resource management must be based on sound science, the NPS was slow to come to this realization. As historian Richard Sellars has shown, the NPS has a long tradition of applying a utilitarian approach to natural resource management. The utilitarian bias has frequently elevated the visitor experience and efficient park administration over science in the management of natural resources. Often in the past, NPS's top managers have marginalized biologists and other scientists. It has only been since the emergence of a national environmental movement in the 1960s and 1970s that the NPS has accorded science a broader role in park management and operations. This evolution was largely the result of pressure from those outside the service rather than NPS initiatives. Although it is impossible to make rigid separations, in general, this chapter focuses on the park's scientific endeavors, while Chapter 12 addresses wildlife issues and Chapter 21 deals with the natural resource protection activities of the ranger force.⁵³⁹

Given that biological values were an important factor in the decision to set aside a portion of the Everglades as a national park, the NPS has been more supportive of a strong science program there than at other units. Park managers in the 1950s saw the need for scientific studies, but the NPS had a miniscule budget for science. As the water control features of the Central and Southern Florida Flood Control Plan came on line, concerns over water supply and water quality grew intense and made the need for adequate scientific studies even more apparent. In 1966, Everglades became the second national park to have a natural sciences research plan. Assistant Secretary of the Interior Nathaniel Reed, a South Floridian with a lifelong interest in the Everglades, spearheaded the 1977 creation of the South Florida Research Center (now the South Florida Natural Resource Center). This was a pioneering move within the NPS and gave science a greatly enhanced status at Everglades. Even so, the effort to better coordinate scientific activities in the park and focus them on broader ecosystem studies has been ongoing. Various reorganizations within NPS and the DOI have adversely affected the science program at Everglades and other units. Notable among these were the 1993 creation of the National Biological Survey and the subsequent placement of Interior biologists within the U.S. Geological Survey.⁵⁴⁰

The NPS typically identifies any scientific endeavor in Everglades or other parks as research. The term research has both a general meaning and a more restricted meaning in

⁵³⁹ See Richard West Sellars, *Preserving Nature in the National Parks: A History* (New Haven: Yale University Press, 1997), esp. 1–5, 149–50, and 217–20.

⁵⁴⁰ Oron Bass, interview by author and Nancy Russell, May 23, 2011; Michael Soukup, interview by author, July 25, 2012.

scientific circles. In general usage, research typically means exhaustive, systematic inquiry or investigation. In scientific circles, the term research often is restricted to activities carried out under the scientific method. In this usage, research means identifying a question or stating a hypothesis, collecting data and/or conducting experiments, and arriving at a conclusion that answers the research question or confirms, refutes, or qualifies the hypothesis.⁵⁴¹ In this chapter, research often carries the more general, rather than the specifically scientific, meaning.

Ten years before the park was established, Dan Beard, who would become the park's first superintendent, undertook the first park-specific scientific inquiries. As an NPS assistant wildlife technician stationed in South Florida in 1937 and 1938, Beard surveyed the area by plane, boat, and automobile and on foot. He compiled a list of proposed studies for the park area, focusing on basic inventories of wildlife and representative plant communities. He also recommended studies of surface water flow and the status of exotic plants and animals. Beard saw the need for more comprehensive ecological studies but felt they would have to wait until inventories had been compiled. Beard's investigations resulted in his October 1938 *Wildlife Reconnaissance*. This work is primarily descriptive, containing information on physiographic areas and known bird rookeries as well as brief summaries of the status of rare species. The document places considerable emphasis on resource management issues, detailing the effects of various types of human use of the Everglades and offering preliminary suggestions on how those effects might be reversed. Acknowledging that the service lacked the scientific personnel to conduct needed Everglades investigations, Beard recommended relying on researchers from cooperating colleges and universities.⁵⁴²

Early Emphases of Park Science

Once established, Everglades National Park was slow to implement scientific investigations. Superintendent Beard and his staff were preoccupied with securing the park area, curbing illegal hunting, and establishing basic visitor services. It took years for park staff to gain a basic understanding of the natural environment, and they could not be expected to design and implement scientific activities quickly. In addition, science had a low priority and minimal funding throughout the NPS in the 1950s. Director Conrad Wirth was preoccupied with the Mission 66 program, which overwhelmingly emphasized construction to meet visitor needs. It is revealing that in 1958, the entire NPS budget for

⁵⁴¹ See definitions in *Merriam-Webster's Collegiate Dictionary*, 11th ed. (Springfield, MA: Merriam-Webster, Inc., 2003), 1059, 1112.

⁵⁴² Daniel B. Beard to RDR1, Dec. 28, 1937, WNRC, 79–85–8, box 13; Beard, *Wildlife Reconnaissance*. In addition to surveying the Everglades, Beard was also coordinating the work of CCC camps at state parks in South Florida.

scientific research, exclusive of salaries, amounted to \$28,000 (\$230,000 in 2014), and about one-quarter of that was devoted to fishery studies in Everglades National Park.⁵⁴³

Everglades National Park in the 1950s relied heavily on others to conduct scientific activities in the park. The U.S. Geological Survey (USGS) continued to maintain its water gauging stations in the park. Superintendent Beard attempted to get assistance from U.S. Fish & Wildlife Service (FWS) scientists, but he found that they were stretched thin and could offer little help. The park's first biologist, Joseph C. Moore, came on duty in the fall of 1949 and stayed for several years.⁵⁴⁴ Moore worked primarily on inventory and monitoring of bird populations, but he also started some preliminary investigations of crocodiles, manatees, dolphins, and squirrels (see Chapter 12). Park naturalists, who mainly worked on interpretive programs, also helped with inventory and monitoring. The NPS was very concerned about the future of sportfishing in the park and how commercial fishing affected fish stocks (figure 11–1, game fish stocks were a focus of early research). In 1951, the park contracted with the Marine Laboratory of the University of Miami for a study of the pink shrimp population in the park. The park was an important spawning ground for shrimp. Shrimp were both a major food source for species of fish sought by sportsmen and the basis of a commercial fishery in the Gulf of Mexico. This was the beginning of a long association between the park and the marine laboratory. In 1957, the park entered into another contract with the laboratory for a multiyear study of marine fish stocks. From 1958 through 1969, researchers interviewed sportfishermen at Flamingo, recording their catches and the amount of time they were out (known as a catch-and-effort study). Long-time park biologist Dr. William B. Robertson later acknowledged that this study was “at the lower limit of sampling reliability.” As early as 1952, Moore thought a permanent marine biologist position was needed in the park.⁵⁴⁵

⁵⁴³ Sellars, 164–68; Asst. Sec. Roger Ernst to Congressman Dante Fascell, May 27 1958, NARA II, RG 48, DOI, Office of the SOI, box 327.

⁵⁴⁴ Some sources state that Dr. William Robertson was the first biologist in any unit of the National Park System east of the Mississippi, but this is erroneous. Determining whether Moore was the first such appointment, however, is beyond the scope of this history.

⁵⁴⁵ SMR, Sept. 1949; Supt. Beard to RDR1, May 23, 1952, NARA II, RG 79, NPS AF, box 2331; Priority List for Natural History Research, Aug. 1954, NARA Ph, RG 79, 79–67-A-661, box 100; Memorandum of Understanding, NPS and Marine Laboratory of University of Miami, Mar. 22, 1951, NARA Ph, RG 79, 79–58A-360, box 8; Supt. to RDR1, Feb. 12, 1962, EVER 55853, box 61; Moore to Supt., Apr. 23, 1952, NARA II, RG 79, NPS AF, box 2331; Gary E. Davis and Edith B. Thue, *Fishery Data Management Handbook, Everglades National Park*, June 1979, <http://www.nps.gov/ever/naturescience/upload/SecureTRT-546.pdf>.



Figure 11–1, game fish stocks were a focus of early research

A second major focus of Everglades science in the 1950s was wading bird and raptor populations and their breeding success. Dr. Robertson began his study of Everglades birds as a University of Illinois PhD candidate in 1948. After working in the park as a fire control aide in the early 1950s and holding term positions, Robertson got a permanent position as a biologist in June 1956. Known to most as “Dr. Bill,” Robertson worked in the park until his retirement in 1997. Much of his time was devoted to bird studies, but Dr. Robertson also participated in vegetation studies and emerged as a key source of counsel to park managers and others in South Florida on a host of biological issues. Early on, Robertson recognized the value of long-term databases. The bald eagle study that he began in 1959 continues today as one of the longest continuously maintained databases on any species. His pioneering work on the effects of fire on ecosystems is covered in Chapter 15.⁵⁴⁶ The early emphasis on studying fish stocks and wading bird populations reflected the then-prevalent NPS tilt toward science that served visitors. Bird watching and sportfishing were among the premier attractions for park visitors, so scientific investigations informing management decisions that would enhance these activities were favored.

⁵⁴⁶ SMR, June 1956; “Pioneering Biologist Discovered Value of Fire,” *Miami Herald*, Oct. 23, 1997; “William B. Robertson II, Glades Scientist,” *Miami Herald*, Feb. 2, 2000; Bass interview. Robertson’s greatest legacy may be his forty-year study of terns at Dry Tortugas National Park, but that is a story for that park’s administrative history. The park has named the old Iori Farms bunkhouse/commissary in honor of Dr. Robertson.

1957 Park Research Conference

Superintendent Beard and his staff considered scientific endeavors of sufficient importance to convene a three-day research conference in the park in June 1957. The conference was intended as the first step “toward establishment of a comprehensive research program.”⁵⁴⁷ Fifty-six outsiders and fifteen NPS representatives attended, most of them authorities in the biology, geology, and hydrology of South Florida. Although the emphasis was on the natural sciences, three of the outside attendees and one NPS attendee were historians or archeologists. The vast majority of the academics in attendance were from the Universities of Miami and Florida. Five scholars came from the University of Miami Marine Laboratory. The Florida Game & Fresh Water Fish Commission, the USGS, the FWS, the U.S. Department of Agriculture, the Corps of Engineers, the Central & South Florida Flood Control District, and the Office of Naval Research were also represented. Echoing Ernest Coe’s vision, the attendees passed a formal resolution calling for the inclusion of a section of coral reef off Key Largo in the park. The conference did not entice many outsiders to conduct research in the park, but it did raise the park’s profile in academia and furthered cooperation between outside experts and park scientists and managers.⁵⁴⁸

The succession of drought years that the park experienced beginning in 1962 brought about changes in the park’s scientific focus (figure 11–2, 1960s droughts affected the nesting of great blue herons). The severe stress caused by low water highlighted the need for more hydrological work and more comprehensive ecological studies. Park managers began to realize that a lot more research was needed to understand how varying water levels throughout the year affected Everglades environments and individual species. In July 1959, the University of Miami Zoology Department had started a study of fresh water marsh ecology in the park, but it seems to have been poorly designed and produced little useful information. Faced with severe drought in the winter of 1961/62, the park decided to have the University of Miami Marine Laboratory review and evaluate a host of existing data in an attempt to estimate the park’s water needs. These studies included J. B. Reark’s work on freshwater marsh fishes discussed below in Chapter 12. The park felt that more extensive ecological studies should follow this review and evaluation. At the same time, outside criticisms of the park science program from the nascent environmental movement led Secretary of the Interior Stewart Udall to commission two evaluations of NPS research from prestigious scientists.⁵⁴⁹

⁵⁴⁷ Ronald F. Lee, Chief, NPS Div of Interpretation, May 7, 1957, to Dr. Richard J. Russell, LSU School of Geology, NARA Ph, RG 79, 79–68-A-2955, box 48.

⁵⁴⁸ “Report of Proceedings, Everglades National Park Research Conference,” June 6, 7, and 8, 1957, WNRC, 79–85–8, box 11.

⁵⁴⁹ Sellars, 200–201; Supt. to RDR1, Feb. 12, 1962, EVER 55853, box 61.



Figure 11–2, 1960s droughts affected the nesting of great blue herons

The 1963 Leopold and National Academy of Sciences Reports

Secretary Udall in 1962 commissioned a study of NPS wildlife management policies and a second study of the service’s natural history research needs. The principal author of “Wildlife Management in the National Parks” was A. Starker Leopold, a well-regarded professor of biology at the University of California, Berkeley, and son of Aldo Leopold. Released in the spring of 1963, what became known as the Leopold Report strongly recommended that scientific research “form the basis for all management programs” in the NPS.⁵⁵⁰ Udall chose the National Academy of Sciences (NASc) to thoroughly examine the service’s scientific efforts. The chair of the NASc committee and chief author of its report was biologist William J. Robbins of the National Science Foundation. Because of the critical situation at Everglades National Park, Robbins convened a week-long committee meeting in South Florida in January 1963. The committee spent a day touring the park and then held sessions in Coral Gables. The NASc committee’s August 1963 report was highly critical of NPS science efforts. It strongly urged that park science adopt an ecosystems orientation and expand its focus beyond charismatic megafauna. The NASc report echoed the findings of a largely ignored 1960 internal report written by Dan

⁵⁵⁰ Sellars, 215.

Beard (in WASO at the time) that lamented the inadequacies of NPS science. In the view of historian Richard Sellars, NPS management reacted defensively to the NASc report and ensured that it got limited distribution. Nonetheless, the Leopold and NASc reports were a milestone for the service and began the slow process of elevating the status of science in the parks and pushing it toward a more ecological approach.⁵⁵¹

On the national level, the NASc report led to the 1964 establishment of a division of natural science studies in the NPS Washington office. A second result was the preparation of a natural science research plan for Everglades National Park, the third such plan ever prepared within the NPS.⁵⁵² Park scientists, NPS Chief Scientist George Sprugel Jr., and others worked on the plan in 1965 and 1966. Several academics, including Archie Carr and John H. Davis of the University of Florida and Clair P. Idyll and Durbin C. Tabb of the University of Miami, helped prepare the plan. Released in September 1966, the plan constituted, rhetorically at least, a firm commitment to an ecologically based research program. The plan stated: “Long-range research efforts in the Park should build toward an eventual understanding of the *organization* and *interrelationships* of the various [natural] communities represented [emphasis in original].” Nevertheless, the plan recognized that crisis conditions in the park often might require management actions in advance of research results, noting that “priority should be given to projects that have a direct and immediate bearing on the survival of the features which the Park was established to preserve.” Further, staffing and funding limitations were recognized as impediments, and no suggestions of additional funding sources were included. The plan made a clear distinction between natural history surveys and research. It recognized the importance of surveys but branded them “more in the province of housekeeping duties of management than research.”⁵⁵³

The 1966 natural science research plan was followed by a 1967 Everglades National Park Resource Management Plan. This was a pilot effort in the NPS, but apparently it was never used by the park. Neither plan resulted in substantially more funding for park science or in freeing the park’s scientists from paperwork, resource management, or advisory tasks that pulled them away from their research. Longstanding inventory and monitoring programs, focused on bird populations, mostly continued. Dr. Robertson also studied and wrote about the effects of 1960s Hurricane Donna on vegetation and wildlife, and in late 1966, he was able to hire John Ogden, just the third wildlife biologist in the park’s history. The USGS expanded its efforts in the 1960s to include ecological research in three Everglades environments: open glades, alligator holes, and the brackish zone. This research apparently was limited to correlating the presence of aquatic species with

⁵⁵¹ Sellars, 169–70, 215–17; SMR, Jan. 1963; “Glades Park Needs Told,” *Miami Herald*, Jan. 16, 1963. The NASc report was “A Report by the Advisory Committee to the National Park Service on Research,” Aug. 1, 1963.

⁵⁵² Isle Royale National Park and Sequoia-Kings Canyon National Park preceded Everglades.

⁵⁵³ William B. Robertson Jr., George Sprugel Jr., Lowell Sumner, eds., “Everglades National Park Natural Sciences Research Plan” (Washington, DC: NPS, Sept. 1966).

variations in water cover, salinity, and other properties. The USGS also undertook an effort to trace vegetation changes by comparison of aerial photographs from 1940 and 1964. Scientists from the University of Miami continued to work in the park, for a time maintaining research stations on Pigeon Key and in the old Iori Farms bunkhouse.⁵⁵⁴

In 1969, Bill Robertson offered this summary of the first twenty years of park science:

[T]he present [science] program just grew (though not very far) and was shaped by its environment, rather than being carefully planned according to the priority of needs. The “program” has always consisted of a very few people with very limited funds. What we’ve done is no measure of what we thought was needed, but rather a measure of the realistic possibilities.⁵⁵⁵

Everglades National Park scientists were involved in the South Florida Environmental Study, an obligation undertaken by the Department of the Interior as a result of the January 1970 Everglades Jetport Pact (see Chapter 8). Scientists from a number of agencies worked on the study, which ultimately produced fifty-one reports in the first half of the 1970s and a 1976 summary report. Beyond establishing criteria for the selection of a new site for the jetport, the project was meant to provide a comprehensive series of reports on the broader South Florida ecosystem. Park biologists Bill Robertson and John Ogden worked on some of the study’s reports. Gary Hendrix, a recent University of Miami PhD in marine biology, was a co-author of the summary report.⁵⁵⁶

By the early 1970s, the park had a resource management coordinator position, which had responsibility for coordinating science efforts. The park’s research budget had grown somewhat, allowing it to hire Richard Klukas as a terrestrial biologist and Gary Davis as a marine biologist. The resource management coordinator, L. Lee Purkerson, moved to the NPS Washington office in August 1974, and Gary Davis was acting resource management coordinator until November, when Gary Hendrix took on that position. John Ogden also left in 1974 for a position with the National Audubon Society and was replaced by James Kushlan. Some of these personnel changes appear to have been engineered by Nathaniel Reed, who took a very active interest in Everglades National Park after his 1971 appointment as assistant

⁵⁵⁴ Milton C. Kolipinski and Aaron L. Higer, “Ecological Research in Everglades National Park,” *National Parks Magazine* 40, no. 229 (Oct. 1966); John Ogden, interview by Brian Gridley, April 10, 2001, University of Florida Proctor Oral History Center, 5; Asst Supt, ENP, to Chief Ranger, Oct. 2, 1975, EVER 42242, ser. IV.

⁵⁵⁵ Bill Robertson to Supt., Feb. 13, 1969, EVER 55853, box 61.

⁵⁵⁶ B. F. McPherson, G. Y. Hendrix, Howard Klein, and H. M. Tyus, *The Environment of South Florida: A Summary Report* (Washington, DC: GPO, 1975), <http://sofia.usgs.gov/publications/papers/pp1011/pp1011.pdf>; Gary Hendrix, interview by author, July 13, 2012.

secretary of the interior for fish, wildlife, and parks. Reed recalls that Audubon was in great need of an expert biologist and that he encouraged John Odgen to apply for the position.⁵⁵⁷

Creation of the South Florida Research Center

In the 1970s, Nathaniel Reed transformed the research program at Everglades National Park. Reed, a prominent Florida Republican, had served as environmental advisor to Claude Kirk, the first Republican governor of Florida since Reconstruction. In 1971, President Nixon appointed Reed to the assistant secretary position, under Secretary of the Interior Rogers C. B. Morton. There were three NPS directors during Reed's tenure: George B. Hartzog Jr. (to December 1972), Ronald H. Walker (January 1973 to January 1975), and Gary Everhardt (January 1975 to May 1977).⁵⁵⁸ Reed had first-hand knowledge of the environmental problems in the Everglades and worked to beef up the park's science program. In 1974, he began pressing for a bonafide research center in the park with an adequate budget. Reed and Director Everhardt visited the park in April 1975, and then Reed requested a report from a team headed by NPS Chief Scientist Theodore W. Sudia. After visiting the park in September, Sudia's team called for a substantial increase in the park's science effort, recommending an annual budget of \$2.975 million and twenty-one permanent positions. At the time, the park's research efforts involved eight permanent professional positions and a \$300,000 annual budget, including the hydrology program, which was separate from the natural science program. Everglades Superintendent Jack Stark thought that Sudia's proposed program was too ambitious and reflected the biases of the study team. The superintendent welcomed the idea of getting more equipment, facilities, and support staff, but he wanted no additional permanent scientist positions in the park. Director Everhardt passed these views along to Reed.⁵⁵⁹

Nathaniel Reed saw Stark's position as typical of NPS managers, few of whom had a science background. Most superintendents had advanced through the ranger ranks and they zealously guarded their management prerogatives. All superintendents and regional directors were white males, and the last thing they wanted was a young PhD scientist, most especially a woman, having input into decision-making.⁵⁶⁰

⁵⁵⁷ 1974 Research Accomplishments and Activities, Feb. 20, 1975, EVER 22965; Nathaniel Reed, personal communication, Aug. 5, 2013.

⁵⁵⁸ Ronald Walker was a former White House aide with no background in land management or conservation; Nathaniel Reed was the de facto director of the NPS during Walker's tenure.

⁵⁵⁹ Nathaniel Reed, interview by author, May 22, 2012; SAR, 1975; Sellars, 236–37; Asst. Sec. Reed to Dr. Sudia, Aug. 8, 1975; Assoc. Dir., Park System Mgmt., to Dir., Oct. 20, 1975; NPS, WNRC, 79–85–8, box 10; Supt. to RDSE, Oct. 10, 1975, EVER 42242.

⁵⁶⁰ Nathaniel Reed, interview by author, May 22, 2012.

Unhappy with the NPS response to Chief Scientist Sudia's recommendations, Reed decided to get an evaluation from distinguished outside scientists. He called on George Gardner, a former special assistant in Interior who at the time was working on a PhD in ecology at the University of Florida. Gardner was joined by another University of Florida scientist, Ariel E. Lugo, who had worked on the South Florida Environmental Study.⁵⁶¹ Together they prepared a report, *An Assessment of Research Program Needs and Priorities for Everglades National Park*, dated January 1976. The Gardner-Lugo report found that the park was at a critical point because of the rapid growth of South Florida and the intensifying competition for water. Further they judged "the Park's research program unable to counteract these threats to the Park with scientifically accurate, relevant information on which to base programs to defend the Park's interests." Gardner and Lugo called for a substantially expanded and reorganized research effort. They proposed a four-part research program:

1. Water-related research, including the study of delivery mechanisms for water to the park, water quality monitoring, and flow measurement. This was seen as the top research priority.
2. Studies of "hot spots" within the park, such as Shark River Slough, the headwaters of Taylor Slough, Canal C-111, and the Hole-in-the-Donut.
3. Community or mosaic ecosystem studies that would go beyond earlier "species by species descriptive approaches."
4. General studies to include completion of fundamental resource inventories, mapping of vegetation, soils, and topography, and a study of fire ecology.⁵⁶²

Other recommendations included a comprehensive library of all park-related research, an outside scientific advisory board for the park, an internal park research and resource management policy group, an annual Everglades science symposium, an environmental management data system, and a park research center either in a new building or a repurposed existing building.⁵⁶³

Reed pressed the NPS to implement the Gardner-Lugo proposals throughout 1976, often finding Director Everhardt and his staff less than enthusiastic and responsive. The director wrote Reed in April 1976 that the service was in basic agreement with the report's recommendations, but Reed in June complained to Everhardt that he had yet to receive a "fully fleshed out plan" for implementing them. The Florida congressional delegation got a \$300,000 add-on for the Everglades science center for FY 1977, and the

⁵⁶¹ Asst. Sec. Reed to Dir., Dec. 9, 1975, NPS, WNRC, 79-95-8, box 10.

⁵⁶² George Gardner and Ariel Lugo, *An Assessment of Research Program Needs and Priorities for Everglades National Park* (Gainesville: n.p., 1976), vi-ix.

⁵⁶³ Gardner and Lugo, ix-xi.

NPS reprogrammed another \$160,000.⁵⁶⁴ With these amounts added to the park's existing science funding, a total of \$695,000 was available for the newly christened South Florida Research Center. The NPS agreed with the report's suggestion that the new center serve Biscayne National Monument as well as Everglades and Fort Jefferson. The center's FY 1978 budget was set at \$1.4 million and remained a separate line item, distinct from natural resource management funding. Reed was fortunate to accomplish all of this before the November election, which denied Gerald Ford a term of his own and meant that Reed's days as assistant secretary were numbered. Not long after the election, NPS officials indicated that they might try to scale back the mission of the research center. In December, the regional director wrote newly installed superintendent John M. Good that he wanted the park's research program to be "results oriented, i.e., research pointed toward application to management program [*sic*]. I was gratified that you share this desire and hope to keep long-term research efforts to a minimum."⁵⁶⁵ It is a testament to Reed's forceful personality and bureaucratic savvy that he was able to permanently establish the science center at the tail end of the Ford administration. Once out of office, however, he could not control its funding level.

Beginning in the fall of 1976, the park moved to get the research center up and running. Gary Hendrix's title changed from resource management coordinator to research director.⁵⁶⁶ The new center had five program areas, plus an administrative branch. The five scientific programs were wildlife ecology, plant ecology, marine ecology, fire ecology, and hydrology. At about this time, Frank Nix, whose position as hydraulic engineer had always reported to the superintendent, retired. Hydrology then became one of the center's program areas, with Pete Rosendahl as its head. James Kushlan and Gary Davis, already at the park, had the wildlife and marine programs, respectively. Hendrix then hired Lloyd Loope to lead the plant ecology program and Dale Taylor for fire ecology.⁵⁶⁷

As center staff was added, some were given offices in the headquarters building and others got trailers in the Pine Island complex. The NPS considered constructing a new building for the center but decided to use the old Iori Farms building, an option that had been mentioned in the Gardner-Lugo report. The NPS Denver Service Center got the job

⁵⁶⁴ Some of the funds were taken from an NPS science center established in 1973 at Bay St. Louis, Mississippi, a pet project of Mississippi Senator John Stennis. The center in Mississippi was largely project-funded and never was enthusiastically received within the service. It was closed in 1977, the same year that the Everglades Center opened. Sellars, 238–39.

⁵⁶⁵ Asst. Sec. Reed to Dir., Apr. 1, 1976; Assoc. Dir. to Asst. Sec. Reed, Apr. 23, 1976; Asst. Sec. Reed to Dir., May 13, 1976; Asst. Sec. Reed to Dir., June 16, 1976; Dir. to Asst. Sec. Reed, July 12, 1976, NPS, WNRC, 79–85–8, box 10; Bass interview; Nathaniel Reed, interview by author, May 22, 2012; RDSE to Supt. Morehead, Dec. 27, 1976, EVER 55853.

⁵⁶⁶ It appears that for a few years the term South Florida Research Center was applied just to the building and the staff was known as the research division. Soon both were being called the research center.

⁵⁶⁷ Gary Hendrix, interview by author, July 13, 2012; Resource Management Coordinator to Supt., Feb. 9, 1976, attachment to 1978 SAR.

of converting the building and astounded park staff with some of their initial suggestions. The scientists at Everglades were able to make some changes to the plans for the building and grounds, notably persuading the folks from Denver that native plants would thrive more readily than blue spruce trees. Park staff also fought to have windows placed in the building, and ended up getting only very narrow, vertical ones. By early 1979, director Hendrix believed that the center was successfully established as a “multidisciplinary research program for the South Florida parks.” The remodeled Iori building contained a wet lab, a dry lab, library, computer center, conference room, fifteen offices, and study areas for twenty technicians. The permanent staff has risen to fourteen people and the budget for FY 1979 was \$1.346 million (figure 11–3, touting the new science program at Everglades, May 1978).⁵⁶⁸



Figure 11–3, touting the new science pro

⁵⁶⁸ Research Manager to Supt., Feb. 9, 1979; James Kushlan, interview by author, May 25, 2012; Gary Hendrix, interview by author, July 13, 2012; Bass interview.

Having little experience with scientific research, the NPS lacked policies on publication. Center director Hendrix established a program of center technical publications to disseminate important data and results that were not appropriate for peer-reviewed journals. Center scientists also were encouraged to submit articles to journals, and Hendrix reviewed manuscripts from staff before their submission. The South Florida Research Center was a pioneering effort within the NPS, and it was important to show its value through published work.⁵⁶⁹

The initial team of program heads, scientists, and technicians was excited about being part of this new NPS commitment to science and the prospect of better understanding the South Florida ecosystem. John Good, Everglades superintendent from October 1976 to February 1980, had been selected for the post by Assistant Secretary Reed because his training was as a biologist and he supported science-based management. By all accounts, the first four or five years of the center were a golden age, marked by productive collaboration among the staff. The concept of systems ecology, which emphasizes a holistic approach to interactions among species and systems, was gaining ground in the 1970s. Many of the young scientists who joined the research center in its early years, James Kushlan in particular, brought this approach to their work. Within the center, wildlife ecology and hydrology were the biggest programs; at one point wildlife ecology had eight or nine technicians, more than any other program (figure 11–4, checking on the health of a tranquilized Florida panther). Each program competed for funding, and those decisions were made by the research director following informal discussions with the program leads.⁵⁷⁰

In 1981, the NPS Southeast Regional Office initiated an evaluation of the first four years of the research center. A three-member team concluded that the research center provided good research and was well managed and “relatively” well funded. The center’s staff chronically believed they lacked the funding needed to accomplish their missions but found themselves the object of considerable envy among NPS scientists from other areas who got even less support. The report’s authors believed that the center needed to do more to achieve a truly “integrated ecosystems approach.” Existing research was found to be focused primarily “on structural aspects of ecosystems” with much emphasis on inventory and monitoring. “A total or integrated ecosystem approach is highly desirable and will require better integration and some reorientation of research programs.”⁵⁷¹

⁵⁶⁹ Bass interview; Gary Hendrix, interview by author, July 13, 2012. Reports from the South Florida Research Center and the South Florida Natural Resource Center are catalogued as EVER 42242 in the South Florida Collections Management Center.

⁵⁷⁰ Gary Davis, interview by author, Aug. 1, 2012; John Good, interview by author, Sept. 6, 2012; Gary Hendrix, interview by author, July 13, 2012; James Kushlan, interview by author, May 25, 2012; Nathaniel Reed, interview by author, May 22, 2012.

⁵⁷¹ Acting RDSE to ENP Supt., July 14, 1981; James L. Cooley, University of Georgia, John D. McCrone, Western Carolina University, and James N. Layne, Archbold Biological Station, “Everglades Science Program Evaluation,” Dec. 1981, EVER-00470.

After several years, tensions arose among the center's staff. These tensions seem to have had their origins in professional differences about the volume and timing of water deliveries to Everglades National Park. James Kushlan's work led him to believe that the annual winter drying out of the ridge and slough areas served to concentrate prey in pools and that the park was asking for too much water, to the detriment of wildlife. Pete Rosendahl's investigations and modeling of water flows prior to the construction of the Central and Southern Florida Project led him to believe that pre-project flows to the park had been substantially larger than what the park was getting ca. 1980. Research Director Hendrix and Superintendent John Morehead (May 1980 to February 1986) supported Rosendahl's view. Additionally, there were disputes between James Kushlan and park management over publication in peer-reviewed journals and the ownership of data collected by a scientist in government employ. Evaluating the various positions in these disputes is beyond the scope of this history; what is relevant is that the disputes led to acrimony and dissension within the research center, which clearly lessened its productivity for some years.⁵⁷²



Figure 11-4, checking on the health of a tranquilized Florida panther

The center's functioning was also adversely affected by the failure of its funding to keep up with inflation and the rise in salary levels as scientists advanced in their careers. The center was funded at \$1.35 million in FY 1978 and \$1.47 million in FY 1988. Just to keep up with inflation, the 1988 figure would have needed to be \$2.45 million. In the early 1980s, the NPS adopted a compensation system for its research scientists known as

⁵⁷² For additional insight, consult the transcripts of the author's interviews with Gary Hendrix, James Kushlan, and John Morehead in the park's archives.

research-grade evaluation. Under this system, promotions were dependent on publication in peer-reviewed journals. Scientists who were well-published rose rapidly in grade, adding to the center's salary costs. Essentially level funding for the center that did not keep up with inflation limited its effectiveness. In some cases, for example, when a senior scientist left, he was replaced by a less experienced scientist with a lower salary cost.⁵⁷³

In 1988, Research Director Hendrix took a leave of absence before moving to the NPS Southeast Regional Office, and center marine biologist James Tilmant was acting director for a time. Superintendent Michael Finley (July 1986 to August 1989) invited Michael Soukup, a limnologist (specialist in freshwater systems) and chief scientist in the NPS North Atlantic Region, to become center director. Soukup understood that the center had gone through a troubled period and sensed that it had become "more of a technician operation and a routine monitoring kind of site rather than a research site." He liked a challenge and agreed to take the position. Acting U.S. Attorney Dexter Lehtinen had filed the water quality lawsuit against the state in October 1988 (see Chapter 9). Soukup and center staff immediately found themselves caught up in supporting the government position in the case. The center staff was divided in its opinions on whether the lawsuit was a good move or a distraction that kept scientists from other research. In 1990, the research center completed a move from the remodeled Iori building to the former headquarters building of the Nike base, which had been turned over to the park and named the Daniel Beard Center.⁵⁷⁴

The South Florida Research Center achieved some notable results. The work of center scientists was an important factor in convincing Congress to approve the Everglades National Park Protection and Expansion Act of 1989. Studies of the fish and invertebrate populations of the northwest versus the northeast portions of the Shark Slough showed that water flows in the northeast, then outside the park boundary, had seriously declined. Superintendent Finley was then able to use this data to back the argument that the East Everglades needed to be added to the park and water flows there restored.⁵⁷⁵

⁵⁷³ SAR, 1978, 1988; Michael Soukup, interview with author, July 25, 2012. James Kushlan believes that PhD scientists who left were replaced with less-credentialed scientists because the latter were less likely to assertively press for science-based management decisions. James Kushlan, interview by author, May 25, 2012.

⁵⁷⁴ SAR 1988, 1990; Gary Hendrix, interview by author, July 13, 2012; Michael Soukup, interview by author, July 25, 2012. In the late 1980s, Superintendent Michael Finley removed several center scientists from research-grade evaluations because the system did not provide credit for center-published technical reports. Research Dir. Gary Hendrix to Program Managers, June 29, 1987, EVER-00470.

⁵⁷⁵ William Loftus, interview by author, June 13, 2012; Michael Finley, interview by author, Nov. 19, 2012.

In 1991, the NPS announced a reorganization of the research center along functional lines. The new program areas were:

- Inventory and monitoring
- Data management
- Ecosystem analysis and modeling
- Resource management and science applications
- Research administration

Funding for the center had risen only to \$1.8 million by 1991. The park repeatedly requested a base funding increase for the center of at least \$1.1 million but was unsuccessful.⁵⁷⁶

The scope of the center's responsibilities evolved during its first fifteen years. The bulk of its research was conducted within Everglades National Park, but it also served Biscayne, Big Cypress, and Fort Jefferson. By the late 1980s, both Biscayne and Big Cypress had added scientific positions, and the center was focused almost exclusively on Everglades. As previously stated, there is considerable overlap between natural resource management and research, especially in the realm of inventory and monitoring. When the center was first established, resource management remained within the resource and visitor protection division. In the late 1980s, the park's resource management program was largely folded into the center, in a three-year process that was completed in early 1990. Because of the fuzzy line between resource management and research, superintendents had some leeway in allocating the center's funding. From time to time, there have been charges that too much of the center's time was devoted to resource management or that center funding for inventory and monitoring was diverted to the resource and visitor protection division but not actually so used. In early 1993, for example, Nathaniel Reed observed, "Funds intended for research were diverted to ranger and visitor protection. Researchers' time was diverted to resource management tasks."⁵⁷⁷

The center and its scientists played an important role in a major 1989 gathering of Everglades scientists, which resulted in a ground-breaking Everglades publication. Sponsored jointly by the NPS and the South Florida Water Management District, the week-long Everglades symposium on Key Largo brought together more than 200 scientists. John Odgen, who had returned to the research center from the National Audubon Society, and Steven M. Davis of the district co-chaired the event. In Odgen's words, it was "the first really large-scale organized effort to pull together all of the scientists who had worked in the Everglades and to really understand what we know and do not know about the system." Papers from the symposium were published in 1994 in

⁵⁷⁶ SAR 1992; SFRC, Target Park Initiative for FY92 Funding Increases, revised Oct. 1, 1991, EVER-1707.

⁵⁷⁷ SAR, 1987; Nathaniel Reed to SOI Bruce Babbitt, Feb. 3, 1993, NPR papers, box 5.

Everglades: The Ecosystem and Its Restoration, edited by Odgen and Davis. The book had a strong interdisciplinary approach and was a milestone in advancing understanding of the ecology of the Everglades.⁵⁷⁸

The Advent of the National Biological Survey

President Bill Clinton's Secretary of the Interior, Bruce Babbitt, had some innovative ideas about the role of science in managing public lands. In March 1993, Babbitt announced his intention to create a National Biological Survey (NBS). He saw the NBS as an ecological counterpart to the U.S. Geological Survey (USGS), which long had conducted scientific research in the physical sciences. Among other things, Babbitt wanted to begin a systematic survey of the nation's ecosystems on both public and private land. Biological scientists working for agencies within Interior (the NPS, FWS, etc.) would move into a separate branch, the NBS, making them more independent of managers and better able to carry on research without pressure to support management's views. Babbitt's move produced significant backlash. Leaders of the property rights movement pounced on the idea of government scientists roaming private property to protect endangered species and provoked a storm of protest. Babbitt also failed to adequately consult with congressional leaders on his goals, and Republicans, who took control of the House in January 1995, opposed funding the new agency. Interior renamed the agency the National Biological Service, but this failed to satisfy conservatives. In a compromise with Congress, Interior in 1996 eliminated the NBS as a separate agency and moved its scientists into a new division within the USGS, the Biological Resources Division (BRD).⁵⁷⁹

As a result of the formation of the BRD, most of the scientists at the research center became employees of the USGS, although they remained duty stationed at Everglades. It was in this same period that the South Florida Research Center became the South Florida Natural Resource Center, clearly an attempt to shield it from conservative critics who opposed the idea of the DOI doing "pure" research. A handful of scientists, including wildlife biologist Oron "Sonny" Bass, remained as park, rather than BRD, employees. At a national level, some park superintendents complained that the removal of research scientists to the USGS deprived them of needed expertise to guide their management decisions. As Michael Soukup has pointed out, park superintendents did not always listen to what staff scientists told them, but they certainly did not want to see those positions taken away and placed under another agency. This dilemma was a major impetus for the expansion of the system of cooperative park study units (CPSU) at universities. CPSU's,

⁵⁷⁸ Acting Supt. Arnberger to Park Staff, Oct. 6, 1989, EVER-00470; John Ogden, interview by Brian Gridley, Apr. 10, 2001.

⁵⁷⁹ "Babbitt to Map Ecosystems under New Policy to Save Them," *New York Times*, Mar. 14, 1993; "Panel Backs Big Cuts in Plans for Environment, Safety," *New York Times*, June 21, 1995.

which later were renamed cooperative ecosystem studies units (CESU), were conceived as a way to provide management-oriented technical assistance to superintendents and take advantage of the extensive resources available at universities. In 1993, center director Soukup spearheaded the formation of a CPSU involving both the University of Miami and Florida Atlantic University.⁵⁸⁰

The Restudy and the Comprehensive Everglades Restoration Plan Shift the Center's Role

The whole saga of the National Biological Survey/National Biological Service/Biological Resources Division was a distraction for the staff at the South Florida Natural Resource Center (SFNRC). At the same time that organizational drama was playing out, Secretary Babbitt was moving to make restoration of the Everglades ecosystem the central environmental priority of the Clinton administration. In 1995, Robert Johnson, a hydrologist who had been at the center since 1983, was named center director. As the Corps of Engineers moved through the reconnaissance and feasibility study phases of the restudy of the Central and South Florida Project, the budget and staff of the SFNRC grew. The park's fiscal year 1997 budget included \$3.36 million for science and natural resource management. From 1996 through 1999, park scientists played important roles in advising on and critiquing the feasibility study, leading to the enactment of the Comprehensive Everglades Restoration Plan (CERP) in 2000. The center's role in the development and progress of the CERP is treated in more detail in Chapter 28.⁵⁸¹

Prior to the passage of the CERP, Congress established the Critical Ecosystem Studies Initiative (CESI) in 1997. CESI was created to support ecosystem restoration throughout South Florida. The Everglades superintendent manages the CESI, which is divided into four program areas:

1. **Baseline Research:** baseline information helps to determine what should be monitored and factors into simulation modeling.
2. **Long-Term Monitoring:** projects in this area evaluate the status of particular species and ecosystems, allowing the assessment of changes over time.
3. **Simulation Modeling:** predictive modeling is an important tool for planning and evaluating proposed modification to the Central and Southern Florida Project.
4. **Environmental Assessments:** employing information and design ideas from the other three program areas, assessments lead to the development of decision-support tools for managers.⁵⁸²

⁵⁸⁰ Michael Soukup, interview by author, July 25, 2012; Bass interview.

⁵⁸¹ SAR, 2003; Robert Johnson, interview by author, Oct. 11, 2012.

⁵⁸² NPS CESI website, <http://www.nps.gov/ever/naturescience/aboutcesi.htm>.

The establishment of the CESI and the implementation of the CERP brought an unprecedented level of scientific attention to the Everglades ecosystem. They also brought about a sizable increase in funding for Everglades science. Scientists look back on the early 2000s as halcyon days. Combined CESI and CERP implementation funding reached \$9.5 million in fiscal year 2002, a figure that has not since been reached.

Since 1997, more than 200 projects have been funded through the CESI. NPS staff have conducted some of these projects, while many are conducted by the USGS, the EPA, NOAA, the FWS, and scientists from universities. CESI funding was \$12 million in fiscal years 1998 and 1999, which scientists look back on as something of a golden age. Since 2004, funding has been in the \$3.8 to \$4 million range.

By 2003, the center's seventy employees could no longer be accommodated within the park. At the time, NPS policy discouraged new construction in parks for anything but visitor services. The center worked with the Government Services Administration to find space in an office building on Krome Avenue in Homestead. The center completed its move to the new location in May 2003 and held a dedication in July.⁵⁸³

Although the South Florida Natural Resource Center continued its many other responsibilities, after 2000, research and monitoring in support of Everglades restoration became its primary focus. As of this writing, the SFNRC receives about \$26 million in funding from operations of the National Park Service (ONPS), CERP, and the Critical Ecosystems Studies Initiative (CESI). ONPS largely funds the natural resource management staff, while CERP funds the ecosystem restoration staff. The CESI funding supports administrative functions and helps fund ecological monitoring and the Office of Ecosystem Restoration. Staff working on ecosystem restoration issues are at Krome Avenue while those devoted to resource management are at the Beard Center in the park. The physical separation of the resource management staff from the ecosystem restoration staff is less than ideal in terms of casual interactions, those "hallway conversations" prized by scientists for sharing of ideas. The center also has water quality staff at the Arthur R. Marshall Loxahatchee National Wildlife Refuge, marine scientists at the Florida Bay Interagency Science Center on Key Largo (see Chapter 13), and staff at Dry Tortugas (figure 11-5, modular laboratory at Florida Bay Interagency Science Center). Given the nature of the CERP, the ecosystem restoration staff has extensive contact with other agencies and spends a fair amount of time on the road. The SFNRC remains by far the largest scientific research operation within the NPS.⁵⁸⁴

⁵⁸³ SAR, 2003.

⁵⁸⁴ Robert Johnson, interview by author, Oct. 11, 2012; Carol Mitchell, interview by author, June 1, 2012.



Figure 11-5, modular laboratory at Florida Bay Interagency Science Center

As of this writing, the SFNRC is organized into four program areas:

1. **Inventory and Monitoring:** this program tracks the status and trends of key natural resources, including hydrology and climate, vegetation, aquatic resources, and important indicator species.
2. **Natural Resources Management Program:** the program is concerned with the control of exotic species and the restoration of disturbed areas, notably the Hole-in-the-Donut.
3. **Applied Science Program:** this program undertakes internal and external research to fill information gaps related to Everglades restoration.
4. **Restoration Assessments:** this program provides scientific and technical contributions to restoration projects and programs and participates in interagency teams.⁵⁸⁵

Much of the work of the SFNRC involves monitoring and assessing various projects aimed at restoring the Everglades. These projects include raising the Tamiami Trail, the operation of stormwater treatment areas, and the projects that are part of the Central Everglades Planning Project (CEPP) (see Chapter 28). The center continues hydrological and biological monitoring efforts that allow assessments of Everglades restoration efforts. These monitoring efforts focus on water quality, water level, and water flow, as well as fish and macro-invertebrate communities and vegetation communities. The SFNRC also does work on threatened and endangered species, exotic species, and the projected effects of climate changes. Many projects involve the extensive use of computer modeling.⁵⁸⁶

⁵⁸⁵ Briefing Statement, South Florida Natural Resources Center at Everglades National Park, Jan. 7, 2010, EVER 22965.

⁵⁸⁶ U.S. DOI, *Budget Justifications and Performance Information, Fiscal Year 2014, National Park Service* (Washington, DC: USDI, n.d. [2013]), 42–45, http://www.nps.gov/aboutus/upload/FY_2014_greenbook.pdf.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 12:
Wildlife, Native Plants, and Endangered Species

Chapter 12: Wildlife, Native Plants, and Endangered Species

The attitude of park managers toward the plants and animals of the Everglades has evolved over time. The mandate in the 1934 act to preserve intact the “unique flora and fauna” has been variously interpreted through the years as changes in scientific thinking gradually affected management attitudes. Park promoters and early park managers understood that certain species, such as wading birds, alligators, and royal palms, were central to the park’s visitor appeal (figure 12–1, Cuthbert Lake Rookery). Not surprisingly, these species were a focus of early monitoring and protective efforts. With its limited resources, the park began the basic task of inventorying species, learning their behaviors, and identifying potential threats. Many of these species had scarcely been studied at all prior to the park’s establishment. As economic expansion and population growth in the 1950s and 1960s changed the face of America, scientists outside the service saw that certain species were threatened with extinction. Rachel Carson’s warnings in *Silent Spring* (1962) about the precarious status of some species, notably the bald eagle, were a wake-up call for many. The growing ecological movement led to the passage in 1973 of the Endangered Species Act. The law placed certain responsibilities on federal land managers and initially fostered a single-species focus. Simultaneously, ecologists were gaining a greater understanding of biodiversity, species interdependency, and the critical role of habitat size. This eventually led the Department of the Interior to focus more on multi-species recovery efforts. It also influenced park managers to adopt a landscape-level approach to species protection, one that transcended political boundaries. These evolving scientific understandings came into play in the development of the CERP in the 1990s. Although CERP had to satisfy many competing interests, it was one of the first plans to approach ecosystem health (and hence species preservation) at the level of the landscape.



Figure 12–1, Cuthbert Lake Rookery

Early NPS Evaluations of Everglades Biota

Even as the enabling legislation for Everglades National Park was making its way through Congress, George M. Wright, head of the NPS Wildlife Division, observed that “the wild life [*sic*] of the Everglades is a paramount reason for making a national park of this area.” As has often been remarked, the Everglades lacked the dramatic geological features of the western parks, and wildlife was seen as the main attraction for visitors. A handful of scientists in the 1930s looked forward to Everglades National Park as a subtropical biological preserve. This broad vision of the park as a preserve was shared by only a few in the scientific community and had made no headway among NPS management. Dan Beard’s 1938 *Wildlife Reconnaissance* addressed physiographic regions, but not wildlife habitat per se. He devoted twenty-seven pages to the area’s rare species, mostly the fauna. Species that Beard discussed included the Florida panther (which he called the Florida cougar), the manatee, the great white heron, the roseate spoonbill, the Everglade kite, the alligator, and the crocodile.⁵⁸⁷ Beard expressed the greatest concern for the crocodile, which he feared might become extinct on the mainland within five years if not protected. The only rare flora that he discussed were the royal palm (*Roystonea regia*) and the Everglades palm (*Acoelorrhaphe wrightii*), which Beard called the saw-cabbage palm.⁵⁸⁸

Following establishment in 1947, Beard and his staff worked to gain an understanding of the populations and ranges of park fauna and flora and provide a wildlife show for visitors at carefully selected locations. Beginning in January 1949, the park chief naturalist prepared a monthly report that included a section on research and observation. A sample entry: “On the 21st of the month, Smooth-billed Anis (*Crotophaga ani*) were observed along the trail over Taylor Slough. This is the first record from the park area since 1918.” The nine projects in park biologist’s Joseph Moore’s work plan for fiscal year 1950 indicated how much basic biological information was lacking. Moore hoped to address:

- Plant community dynamics
- Census of alligators and crocodiles
- Sea turtle reproduction
- Manatee range and breeding
- Vectors of communicable disease
- Small mammal density
- Fox squirrel ecology
- Bird rookeries
- Bird roosts and feeding grounds

⁵⁸⁷ Beard devoted five and one-half pages to the Flamingo although nothing indicated that the bird had nested in Florida in the historic period.

⁵⁸⁸ George M. Wright to Dir. Albright, Mar. 8, 1933, NARA II, RG 79, NPS CCF, box 914; Beard, *Wildlife Reconnaissance*, 63–89.

A major first step in giving visitors a look at Everglades wildlife came with the January 1950 opening of the elevated Anhinga Trail at Royal Palm Hammock (see Chapter 20).⁵⁸⁹ Protecting species from human depredation was also a key part of the mission; that story is covered in Chapter 21.

Thanks largely to efforts by Dr. Bill Robertson, data sets on bird species were begun in the 1950s and have been maintained for decades. As park biologist Oron “Sonny” Bass has put it, “Bill always had the foresight to realize the value of long-term databases. Our eagle database started in 1959 [1958–1959] and continues today.” Another important ongoing effort was the annual Christmas bird census at Coot Bay. This began in December 1950 under the sponsorship of the park and the Tropical Audubon Society and has been maintained ever since. These counts provide a decades-long series of observations of resident and visiting species. The 1978 count, for example, recorded 156 species, nine of them rare or unusual.⁵⁹⁰

The Impact of the Endangered Species Act

The 1973 Endangered Species Act (ESA) was the first federal legislation to impose significant procedural requirements related to imperiled wildlife on federal lands. It was preceded by more limited legislation in 1966 and 1969. The 1966 Endangered Species Preservation Act authorized the Secretary of the Interior to compile a list of species threatened by extinction and encouraged all federal agencies to protect such species. This act was amended in 1969. The first listings under the 1966 act occurred in 1967. Upon passage of the 1973 law, existing listings became subject to the new provisions.⁵⁹¹

President Richard Nixon signed the Endangered Species Act on December 28, 1973, after Congress had approved it on a broad bipartisan basis. It was the most comprehensive and stringent of the flurry of environmental laws passed in the 1970s, and most members of Congress did not fully understand its implications. The act’s stated purpose was to conserve the ecosystems that endangered and threatened species depended upon. The act defined endangered as “in danger of extinction throughout all or a significant portion of its range.” It defined threatened as “likely to become endangered within the foreseeable future.” The ESA

⁵⁸⁹ Proposed Work Program for the Park Biologist, approved June 30, 1949, NARA Ph, RG 79, 79–58A-360; SMR, Jan. 1950; Chief Naturalist’s Report, Dec. 1949, EVER 28443. Ten years of park chief naturalist monthly reports are available at: <http://archive.org/stream/chiefparknatural4959unse#page/n63/mode/2up>.

⁵⁹⁰ Bass interview; Chief Naturalist’s Report, Jan. 1950, EVER 29443. National Park Wildlife Monitoring Annual Report, FY79, EVER 42242, ser. IV. Robertson also began a long-term database on terns at Dry Tortugas National Park.

⁵⁹¹ Charles C. Mann and Mark L. Plummer, *Noah’s Choice: The Future of Endangered Species* (New York: Knopf, 1995), 153–56; P. L. 89–669, P. L. 91–135.

set up a three-step process under which the status of a species first would be evaluated. If it was determined to be endangered or threatened, its critical habitat would be defined, and finally a species recovery plan formulated. Under current regulations, recovery plans are to obtain “objective, measurable criteria” for measuring progress toward a species’ recovery. The National Marine Fisheries Service, a branch of the National Oceanic and Atmospheric Administration (NOAA), administered the act for marine species. The U.S. Fish and Wildlife Service (FWS) was responsible for all other species. Once a species was listed as endangered, federal agencies were required to seek a biological assessment from the appropriate agency prior to any action that could potentially affect the species. Private individuals were prohibited from killing, harming, harassing, or transporting endangered wildlife species. Under the original act, this prohibition was absolute and included a ban on harming wildlife habitat. Endangered plants enjoyed less protection; their transport was prohibited, but they could be freely disturbed on private property unless a federal action (typically a permit) was involved.⁵⁹²

A 1982 amendment to the ESA set up procedures that allowed private land owners to engage in “incidental” takings of wildlife or wildlife habitat if they provided mitigation. The FWS would consider habitat conservation plans that minimized or mitigated damage “to the maximum extent practicable.” The plans often involved the conservation or purchase of other habitat by a landowner to compensate for the lost habitat. If the FWS found the plan biologically acceptable and financially sound, it would issue an incidental-take permit, allowing a project to go forward and protecting the landowners from penalties under the ESA.⁵⁹³ Environmental groups from time to time have questioned the adequacy of some habitat conservation plans.⁵⁹⁴

The ESA had profound effects on the management of wildlife in national parks and elsewhere. As of this writing, approximately twenty endangered or threatened animals and two endangered plants are found in Everglades National Park. Most of the endangered animals that breed within the park are individually considered below. Because of their expertise, park and research center scientists have been called upon to serve on recovery teams for species. Park scientists also serve on interagency bodies created to assist in species conservation and recovery. The ESA and the National Environmental Protection Act require reviews of the effects on endangered species when

⁵⁹² Joe Roman, *Listed: Dispatches from America’s Endangered Species Act* (Cambridge, MA: Harvard University Press, 2011), 51–53; Donald C. Baur and William R. Irvin, eds., *Endangered Species Act: Law, Policy, and Perspectives* (Chicago: American Bar Assn., 2002), xi. Other 1970s acts were the Clean Air Act, 1970; the Water Pollution Control Act, 1972; the Marine Mammal Protection Act, 1972, and the Fishery Conservation and Management Act, 1976.

⁵⁹³ Mann and Plummer, 187–88.

⁵⁹⁴ David S. Wilcove, “Endangered Species Management: the U.S. Experience,” in *Conservation Biology for All*, Navjot S. Sodhi and Paul R. Ehrlich, eds. (New York: Oxford University Press, 2010), 229–30, <http://www.conbio.org/publications/free-textbook>.

a project involves federal funding or a federal permit. Because a great deal of private development in South Florida involves draining wetlands and thus a permit from the U.S. Army Corps of Engineers, the provisions of the ESA frequently come into play. The park comments on permit applications to the Corps. The FWS is a sister agency of the NPS within the Department of the Interior. The missions of the two agencies overlap but are not identical. At times, biological assessments concerning endangered species from the FWS have complicated management actions contemplated by the park or other agencies.

State Regulations for Threatened and Endangered Species

In 1977, the state legislature passed the Florida Threatened and Endangered Species Act. The act made the conservation and protection of these species a goal for the state and directed the Florida Fish and Wildlife Conservation Commission to pursue research, management, and public education related to such species. Under amendments to the act, in 1999 Florida established an endangered and threatened species list. NPS policy requires the park to take state listings into consideration in its management decisions. In Florida, there is substantial overlap between federal and state listings. Under Florida law, the intentional killing or wounding of a threatened or endangered species is a third degree felony, and the Fish and Wildlife Conservation Commission is authorized to pay rewards to citizens providing information leading to convictions for violating the act.⁵⁹⁵

Biodiversity and Conservation Biology

At about the same time that the ESA was under consideration, something of a sea change was taking place among ecologists and some land managers. From the 1960s through the 1980s, a great deal was learned about biological diversity at multiple levels (genetic, species, ecosystem) and the dynamic nature of ecosystems and landscapes. An increasingly sophisticated set of tools, notably remote sensing, computer modeling, and geographical positioning systems, became available. These developments, coupled with a growing awareness of ecology's social aspects, produced a new discipline, conservation biology. Conservation biology has been defined as a "crisis-driven, mission-oriented, problem-solving discipline" oriented toward the "description, explanation, appreciation, protection, and perpetuation of biological diversity." Conservation biology focuses on ecosystem- and landscape-level issues as well as interactions among species. As conservation biology began to gain traction, ecologists increasingly questioned the single-species orientation of the ESA. The concept of ecosystem management also evolved from conservation biology. As scientists gained greater understanding of the interrelationships across an ecosystem, it was increasingly apparent that active management

⁵⁹⁵ Skip Snow, personal communication, Nov. 13, 2014; Florida Statutes, Sections 379.2291–2292; Florida Administrative Code, Section 68A-27, http://myfwc.com/media/215871/Imperiled_ListedSpeciesRule.pdf.

decisions would be needed to sustain ecosystem health. These insights were important in the development of the Comprehensive Everglades Restoration Plan (Chapter 28).⁵⁹⁶ Everglades National Park was the site of an important early biodiversity experiment. In their 1967 book, *The Theory of Island Biogeography*, Robert H. MacArthur and Edward O. Wilson argued that the diversity of species on an island was directly related to the size of the island and its distance from other islands or the mainland. The book became a classic and led to a great deal of work on the role of habitat size and the degree of isolation on species diversity. To test his ideas on the achievement of species equilibrium on an island, Wilson in 1968 got permission from Everglades National Park to totally eliminate all arthropods on two small (11 to 18 meters in diameter) mangrove islets. Wilson and his graduate student, Daniel S. Simberloff, carefully tallied the number of arthropod species before extermination. Recolonization occurred within four to six months and validated Wilson's predictive model concerning relative isolation. Wilson later described this as one of the first experiments on a complete natural ecosystem.⁵⁹⁷

Multi-Species Recovery Plans

Through the mid-1990s, the majority of recovery plans under the ESA were single-species plans.⁵⁹⁸ Responding to the increased focus on biodiversity and pressured by lawsuits, the FWS since 1995 more often recommended multi-species plans. In theory, multi-species plans had the potential to improve ecosystem health, thus benefitting numerous species, while also saving time and money. The great majority of multi-species plans approved in the 1980s and 1990s included fewer than ten species. South Florida, with its severely compromised ecosystems and large number of threatened and endangered species, appeared a prime candidate for the multi-species approach. The FWS assembled a large team to prepare the *South Florida Multi-Species Recovery Plan* (MSRP), released in 1999. The plan identified the recovery needs of sixty-eight threatened and endangered species and twenty-three natural communities. The territorial range of the plan was the nineteen southernmost Florida counties, embracing 26,000 square miles. The MSRP was “one of the first specifically designed to recover multiple species through the restoration of ecological communities over a large geographic area.” Tom Armentano, Oron L. Bass Jr., David Jones, and Skip Snow from the park were

⁵⁹⁶ Curt Meine, “Conservation Biology: Past and Present,” in Sodhi and Ehrlich, *Conservation Biology for All*, 7–12.

⁵⁹⁷ Robert H. MacArthur and Edward O. Wilson, *The Theory of Island Biogeography* (Princeton: Princeton University Press, 1967); Edward O. Wilson, “The Species Equilibrium,” in *Nature Revealed: Selected Writings, 1949–2006* (Baltimore: Johns Hopkins University Press, 2006), 484–494.

⁵⁹⁸ The first multi-species plan covered two plant species found in the sand dunes of Eureka Valley, California.

members of the team that developed the MSRP. In March 2007, the FWS gave formal notice of the availability of the final implementation schedule under the MSRP.⁵⁹⁹

More Resources to Study Species

The establishment of the South Florida Research Center in 1977 gave Everglades National Park resources to study rare and endangered species that had previously been lacking. The center produced a flurry of studies in the late 1970s and 1980s on individual species and ecological topics. As the FWS became more active in implementing the ESA, its scientists often took the lead in studying imperiled species. The state of Florida also stepped up its research conservation efforts, and more and more academic scientists chose to conduct studies in South Florida. The remainder of this chapter provides summaries of how major categories and individual species have been approached by park managers over the decades since 1947.

Wading Birds

Wading birds that have been known historically to nest in Everglades National Park include the roseate spoonbill (*Ajaja ajaja*), the great egret (*Cadmerodius albus*), the wood stork (*Mycteria americana*), the white ibis (*Eudocimus albus*), the snowy egret (*Egretta thula*), the tricolor heron (*Egretta tricolor*), the little blue heron (*Egretta caerulea*), the great blue heron (*Ardea herodias*), and the black-crowned night heron (*Nycticorax nycticorax*). Of these, the wood stork, great egret, snowy egret, white ibis, and roseate spoonbill currently nest in the park in verifiable numbers. Several other wading birds are casual park visitors (figure 12–2, Tricolor heron).⁶⁰⁰

As the crowning glory of Everglades wildlife, wading birds were of paramount concern to Superintendent Beard and his small staff in the park's early years. Park rangers acted to protect known rookeries and monitored yearly breeding success as best they could. At first the primary motivation was probably ensuring a good wildlife display, but it later became apparent that the status of wading birds was an excellent indicator of the general health of the ecosystem. As soon as they were in park ownership, rangers closed Cuthbert Lake Rookery, East River Rookery, and Rookery Branch in headwaters of Shark River Park during breeding season.⁶⁰¹

⁵⁹⁹ FWS, *South Florida Multi-Species Recovery Plan* (Atlanta: FWS, 1999), ix, <http://www.fws.gov/verobeach/ListedSpeciesMSRP.html>; Susan D. Jewell, "Multi-Species Recovery Plans," *Endangered Species Bulletin* 25, no. 4 (May/June 2000): 30–31; J. A. Clark and E. Harvey, "Assessing Multi-Species Recovery Plans under the Endangered Species Act," *Ecological Applications* 12, no. 3 (June 2002): 655–58.

⁶⁰⁰ A comprehensive checklist of birds found in the park is available online at <http://www.nps.gov/ever/naturescience/birdspecieslist.htm>. The cattle egret (*Bubulcus ibis*), a species introduced to North America in the nineteenth century, is also found in the park.

⁶⁰¹ Supt. Beard to RDR1, Dec. 18, 1951, NARA Ph, RG 79, 79–58A-360, box 7.



Figure 12-2, Tricolor heron

The completion of the WCAs under the Central and South Florida Project in the 1960s closed off sheet flow into the park and began to affect wading bird nesting. The formation and continuance of bird rookeries depend on the availability of prey—the small fish and invertebrates that collect in pools as the glades dry out in winter. The closing of the gates to WCA 3 in the 1960s coincided with drought, and the ridge and slough areas were frequently too dry. In later years, when water levels were too high farther north, large amounts of water were dumped into the park, interfering with the concentration of prey. From park establishment, rangers estimated bird populations in rookeries. In the 1980s, South Florida Research Center (SFRC) staff began flying regular surveys and estimating rookery populations from the air, a practice that has continued. Center scientists also did studies that, among other things, began to reveal differences in prey preference and feeding range for different species. By the late 1980s, park scientists were able to identify three major impacts from the C&SF project. First, birds were delaying nesting. Wood storks that previously nested in November and December were now forming colonies in February and March. The smaller herons, egrets, and ibis had shifted from February and March to March and April. Second, birds were changing their nesting locations. Species with more limited foraging ranges, such as egrets, white ibis, and the smaller herons, were more often nesting to the north in WCA 3. Finally, nesting was becoming less successful. As one example, from 1953 through 1962, wood storks nested successfully within the park in seven of ten years; from 1963 through 1988, in only seven of twenty-five years.⁶⁰²

⁶⁰² John C. Odgen, *Impacts of the Everglades GDM on Populations of Nesting Wading Birds in Everglades National Park*, Dec. 1988, EVER 22965; Bass ; James Kushlan, interview by author, May 25, 2012.

Estimating Bird Populations

Any discussion of Everglades wading birds must address a persistent myth. The confident statement that the wading bird population of the Everglades has declined 90 or even 95 percent can be found in dozens of books and articles. Although it is clear that wading bird populations are now less than they were in the past, it is impossible to accurately estimate populations prior to the 1970s. Simply put, there are no data to support assertions that South Florida had as many as 2.5 million wading birds in the 1870s before organized plume hunting began or had rebounded to 1 to 1.5 million birds by 1935. In 1973, for example, Bill Robertson gave the following estimates for South Florida wading bird populations:⁶⁰³

1870	2,500,000
1910	500,000
1935	1,500,000
1960	300,000
1973	150,000

There were no qualified observers in the Everglades before 1901, so nineteenth century estimates are mere guesses. Following Guy Bradley's 1905 death, Audubon wardens did not return to the area until 1931. In the mid-1930s, the NAS's Robert Porter Allen established a field research station at Tavernier in the keys. Allen visited the huge colony at Rookery Branch on Shark River and reported that the number of birds was beyond counting. Over time, in various Audubon publications, the number rose to hundreds of thousands, then half a million, and finally a million—all based on Allen's original observation that they were too many to count. In 1946, as FWS wardens were replacing Audubon wardens in the Everglades, Allen reviewed warden reports from 1901–1905 and 1931 on. His analysis cautioned that no great reliance should be placed on warden bird counts because wardens were few, each warden used his own methods to arrive at population estimates, and there were wide, unexplained fluctuations from year to year. Once the million plus bird estimate and 90 percent decline claim got into print, they kept being repeated. Their popularity stems in part from their usefulness in getting the public's attention and promoting conservation measures.⁶⁰⁴

⁶⁰³ Dr. William B. Robertson Jr. to Joel Kuperberg, Executive Dir., Trustees of the Internal Improvement Trust Fund, June 1, 1973, EVER-01385.

⁶⁰⁴ R[obert] P[orter] A[llen] to John H. Baker, transmitting A Report of Warden Work and Rookery Success in South Florida, 1902–1946, Oct. 4, 1946, EVER-01385; James Kushlan, interview by author, May 25, 2012; Graham, 169–70.

Wood Stork

The wood stork is the only wading bird nesting in the park that has ever been listed as endangered. The southeastern U.S. is the northern extent of the breeding range of this large (30- to 45-inch-tall) white bird with black accents. Wood storks typically nest in medium to tall trees occurring in stands located either in swamps or on islands surrounded by open water. Storks often nest in conjunction with great egrets, snowy egrets, white ibis, and other wading birds. Wood storks forage using tactolocation, or grope feeding. The birds put their open beaks in shallow water and snap them shut when fish of sufficient size are detected.⁶⁰⁵

The FWS listed the U.S. population of the wood stork as endangered on February 28, 1984. A recovery plan was signed on September 9, 1986, and a revised recovery plan released on January 27, 1997. The FWS has not designated critical habitat for the species. Wood stork populations hit a low point in the late 1970s, when it was estimated that there were 5,000 breeding pairs in the entire Southeast. Before the 1970s, 75 percent of wood storks nested south of Lake Okeechobee. As changes to the water regime in South Florida made that region less hospitable to the storks, their breeding range has expanded to the north. As of the mid-2000s, 70 per cent of wood storks were nesting north of Lake Okeechobee. Substantial numbers of breeding colonies are now located in North Florida, Georgia, and South Carolina. Overall, it appears that the number of breeding pairs per colony has declined. The greatest threat to the species remains the loss of foraging wetlands. As wetlands are lost under approved habitat conservation permits, it is not certain that the wetlands provided as mitigation will adequately meet wood stork foraging needs. The wood stork has been identified as a sentinel species to measure the success of the restoration of the Everglades ecosystem.⁶⁰⁶

In June 2014, Secretary of the Interior Sally Jewell announced that the FWS was beginning the process of moving the wood stork from endangered to threatened status. The step was taken because the bird had successfully established nesting colonies in Georgia and the Carolinas. The FWS gave an estimate of 9,000 breeding pairs in justifying the change in status. The National Audubon Society questioned whether there was an adequate scientific basis for making the change.⁶⁰⁷

⁶⁰⁵ *Multi-Species Recovery Plan*, 4–393–4–402.

⁶⁰⁶ FWS, *Wood Stork (Mycteria Americana) 5-Year Review* (Jacksonville: FWS, 2007).

⁶⁰⁷ “Iconic Wood Stork No Longer on Endangered List,” *Portland Press Herald*, June 26, 2014.

Cape Sable Seaside Sparrow

The Cape Sable seaside sparrow (*Ammodramus maritime mirabilis*) is a medium-sized, nonmigratory sparrow found only in Monroe and Miami-Dade Counties (figure 12–3, Cape Sable seaside sparrow). It is one of eight extant subspecies of seaside sparrow found in the U.S. The Cape Sable seaside sparrow was first reported and described in 1918 when a population was nesting in and around Cape Sable. The 1935 hurricane changed the Cape Sable vegetation and water salinities, and the sparrow was later found nesting in locations farther inland. By the 1990s, six subpopulations had been identified, all in or directly adjacent to Everglades National Park. The sparrow is quite particular about where it nests, seeking short-hydroperiod marl prairies and avoiding sites with permanent water cover. Sparrow nests occur in vegetation within six or seven inches of the ground, making them highly vulnerable to rises in water level. The sparrow typically does not nest on burned-over prairie until two to four years after a fire and frequently walks along the ground to forage. Since the bird has a lifespan of just two to four years, even short-term disruption of its nesting and foraging habitat can have dire consequences for the subspecies' survival.⁶⁰⁸



Figure 12–3, Cape Sable seaside sparrow

⁶⁰⁸ “Critical Habitat Designation, Cape Sable Seaside Sparrow, Proposed Rule,” 71 Fed. Reg. 63980–64002 (Oct. 1, 2006).

The FWS listed the sparrow as endangered on March 11, 1967, and designated critical habitat on September 22, 1977, at a time when the full distribution of sparrow subpopulations was not understood. A recovery plan was prepared in April 1983, with SFRC scientist James Kushlan as chair; the plan was then updated in May 1999 as part of the MSRP. In August 1999, the Biodiversity Legal Foundation and others petitioned the FWS to revise the designated critical habitat. The FWS determined that new information obtained since 1977 likely warranted a revision. Believing that FWS was not responding within the required time periods, the Biodiversity Legal Foundation in December 2000 brought suit in U.S. District Court. The court ordered the service to commit to a timetable for preparing a revised critical habitat. In response, FWS published a proposed rule in October 2006 and a final rule on critical habitat in November 2007. The final rule designated 84,865 acres of critical habitat in five discontinuous units. Four of the units are entirely within Everglades National Park. Unit 3 straddles the eastern park border and includes 9,867 acres of state-managed land (figure 12-4, Cape Sable seaside sparrow subpopulations).⁶⁰⁹

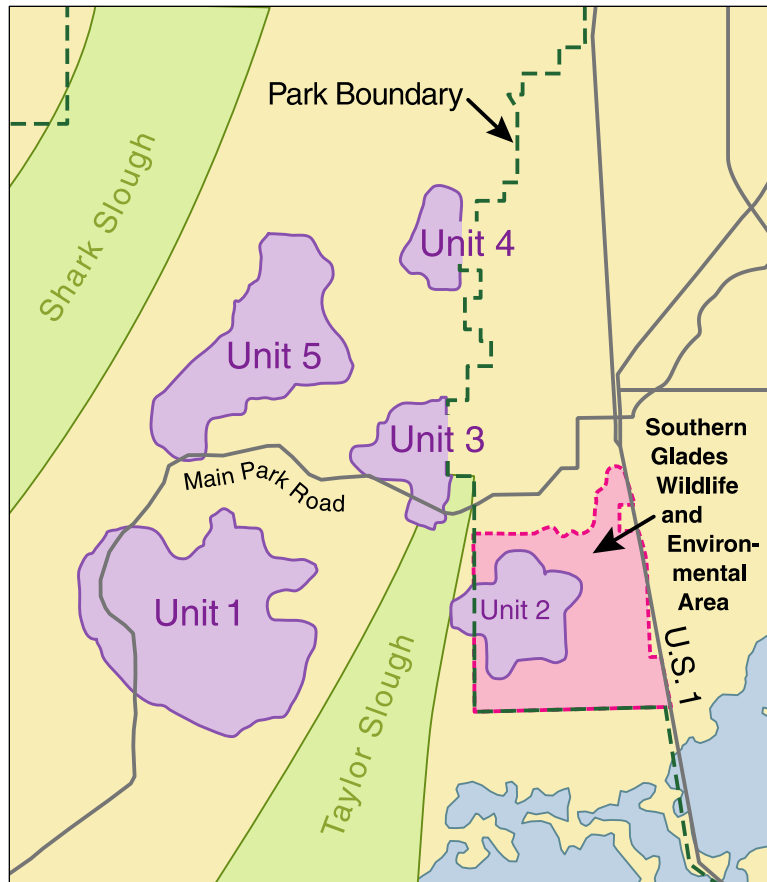


Figure 12-4, Cape Sable seaside sparrow subpopulations

⁶⁰⁹ 32 Fed. Reg. 4001 (original designation); the final rule on revised critical habitat and citations to other rules is found in 73 Fed. Reg. 62736-62766 (Nov. 6, 2007).

Starting in 1978, NPS scientists began studying the sparrow's distribution and abundance, conducting a systematic survey in 1981. This resulted in several publications and a 1982 sparrow management plan. At that time, sparrows were nesting on the northwestern edge of the park, in the East Everglades, south of the main park road, and just to the east of the park boundary. Between 1993 and 1995, the abundance of the sparrow declined by more than 50 percent. A major reason was that water released by the SFWMD was flooding sparrow nesting areas on the western side of the park. At the same time, nesting areas on the eastern side of the park were being adversely affected by fire. In February 1999, the FWS issued a biological opinion concluding that tests one through seven of the modified water deliveries program (see Chapter 28) were "the primary cause of declines in sparrow populations since 1992 and have jeopardized, and will continue to jeopardize the continued existence" of the subspecies. In October 1999, the Natural Resources Defense Fund and others brought suit against the Corps and the water management district asking the U.S. district court to order the defendants to take steps to protect the sparrow. In 2001, the court denied the plaintiffs' motion for injunctive relief. In the meantime, in January 2000, the Miccosukee Tribe had filed its own lawsuit claiming that actions by the Corps and the district aimed at aiding the sparrow had harmed the tribe by elevating water levels in WCA 3.⁶¹⁰

Of the six identified sparrow subpopulations, three—subpopulations A, B, and E—are core populations, i.e., they are believed to be capable of maintaining large enough numbers to be self-sustaining. As of 2010, the FWS considered only subpopulation B (located south of the main park road) self-sustaining. Subpopulation A on the western edges of Shark Slough was the hardest hit by the 1990s flooding. FWS places a high priority on restoring an appropriate water regime for subpopulation A. Subpopulation C is in the headwaters of Taylor Slough, which has experienced significant fluctuations in water level from year to year. The census of subpopulation C fluctuated between forty-eight and 160 individuals for most of the 1990s and 2000s. Subpopulations D and F have been consistently small, with generally fewer than fifty individuals.⁶¹¹

⁶¹⁰ 73 Fed. Reg. 62736–62766 (Nov. 6, 2007); "Glades Flooding Killed Hundreds of Sparrows," *Miami Herald*, Nov. 28, 1998; quotation in *Multi-Species Recovery Plan*, 4–357; Case No. 99–2899-CIV-Moore/O'Sullivan, U.S. District Court, Southern District of Florida.

⁶¹¹ FWS, *Cape Sable Seaside Sparrow (Ammodramus maritimus mirabilis) 5-Year Review: Summary and Evaluation* (Vero Beach, FL: FWS, 2010).

Everglades Snail Kite

Although the bird is now officially known simply as the snail kite, the older name of Everglades snail kite is commonly used. This kite (*Rostrhamus socialibilis plumbeous*) is a medium-sized hawk with a wingspan of about 45 inches. Mature males are slate gray with a red beak and black and white tail; adult females are mottled brown and white. The Everglades kite is believed to be one of three subspecies of a kite that is also found in Cuba and Central and South America. The subspecies *Rostrhamus socialibilis plumbeous* is found in Cuba, Northwest Honduras, and Central and South Florida. The Florida population of the kite feeds almost entirely on the freshwater apple snail (*Pomacea paludosa*). The bird's slender curved beak is specially adapted for removing a snail from its shell. Kite habitat consists of freshwater marshes and the edges of lakes where apple snails are found. Observations in the 1960s indicated that the total kite population had fallen to dangerously low levels, perhaps fewer than 100 individuals, although the limitations of the survey methodology employed at that time make firm conclusions impossible. Beginning in the early 1990s, some birds have been radio-tracked, and recent population estimates carry more reliability. Kite populations were on the increase through the 1990s, but then declined in the 2000s, probably as a result of a number of years of low water, which reduced the supply of apple snails available to kites.⁶¹²

The Everglades snail kite was listed as endangered on March 11, 1967. Critical habitat for the subspecies was designated on August 11, 1977. A recovery plan was produced on March 11, 1983, and revised September 9, 1986. A substantially revised recovery plan was prepared as part of the MSRP of May 18, 1999. As the Central and South Florida Project changed water levels in marshes, lakes, and streams, kite populations have relocated within the state. Major nesting grounds for the kite in recent decades have been Lake Tohopekaliga in the center of the state south of the city of Kissimmee and WCA 3. Few if any kites have been nesting within Everglades National Park. In recent years, an exotic species from South America, the island apple snail (*Pomacea insularum*) has been found in greater numbers in South Florida. The island apple snail is considerably larger than the native apple snail, the kite's traditional prey, but it is less affected by changes in water levels. As yet, it is unclear whether the intruder is replacing the native snail or how suitable a food source the introduced species will be for the kite.⁶¹³

⁶¹² *Multi-Species Recovery Plan*, 4–291–294; Doreen Cubie, “Are These Kites Headed for a Fall?” *National Wildlife* 45, no. 1 (Dec. 2006/Jan 2007): 18–20; Audubon Florida, “Everglades Snail Kite Nesting Season Summary, 2012,”

http://fl.audubon.org/sites/default/files/documents/audubon_evergladesnailkite_jan2013.pdf.

⁶¹³ FWS, *Everglades Snail Kite (Rostrhamus sociabilis plumbeus) 5-Year Review: Summary and Evaluation* (Vero Beach, FL: FWS, 2007); Christopher E. Cattau, Julien Martin, and Wiley M. Kitchens, “Effects of an Exotic Prey Species on a Native Specialist: Example of the Snail Kite,” *Biological Conservation* 143 (2009): 513–20.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is America's national bird, having been chosen in 1782 to appear on the great seal of the United States. It is the only species of sea eagle in the U.S. and makes its home near a variety of bodies of water—oceans, bays, rivers, large lakes, and reservoirs—across the country (figure 12–5, bald eagle in flight). Adults have white heads and tails contrasting with a chocolate brown body. The bird's Latin name translates as sea (salt) eagle with a white head. Females weigh from ten to fourteen pounds; males are smaller at eight to ten pounds. The bird's wingspan can exceed seven feet. The eagle's primary prey is fish, but it also feeds on small reptiles, birds, mammals, and carrion. Eagles return to the same area and often the same nest, year after year. In 1962's *Silent Spring*, Rachel Carson used the bald eagle to drive home her warnings about the dire effects of organochlorine pesticides, notably DDT, on bird populations. Largely because of uncontrolled pesticide use, the bird went into a severe decline after World War II, with fewer than 500 breeding pairs remaining in the lower forty-eight states in 1963. The pesticides had similar effects on osprey, pelicans, and other top-tier predator birds.



Figure 12–5, bald eagle in flight

Because of the eagle's uncertain future, high public profile, and protected status within Everglades National Park, Dr. Bill Robertson made the species a focus of early censuses and research. During the winter of 1958/59, Robertson and other park staff began flying over the park and adjacent areas in fixed wing aircraft, counting eagle nests and monitoring fledglings. Eagle nests are large, weighing up to 1,000 pounds, and often fairly easy to spot from the air. Observers also were able to spot adult eagles in flight and follow them to their nests. In addition to counting individuals, the researchers removed a few eggs and had them tested for organochlorines. Robertson reported in 1969 that eagles in the park “appear to be reproducing at a rate entirely adequate to maintain the local

population, in spite of surprisingly high DDE [dichlorodiphenyldichloroethylene⁶¹⁴] residues detected in eggs.” The U.S. banned DDT in 1972, and bald eagles began a slow recovery in many areas of the U.S. Robertson was a member of the team that produced a recovery plan for the southeastern population of bald eagles in 1984.⁶¹⁵

Even before the U.S. enacted broad legislation to protect endangered species, Congress in 1940 passed the Bald Eagle Protection Act. This law made it a federal crime to take bald eagles anywhere.⁶¹⁶ On March 11, 1967, the eagle was placed on the endangered species list south of latitude 40 north (roughly, a line from northern California to Philadelphia). On February 14, 1978, it was listed as endangered in forty-three states (including Florida) and threatened in five midwestern and western states. As eagle population continued to increase, the FWS on July 12, 1995, reclassified the species as threatened in those forty-three states. Finally, after a prolonged period of analysis and public comment, the FWS declared the bald eagle recovered and delisted it, effective August 8, 2007. By that point almost 10,000 nesting pairs were present in the lower forty-eight states.⁶¹⁷

The bald eagle monitoring at Everglades represents one of the longest continuous monitoring efforts on a single species anywhere in the U.S. The annual eagle monitoring from aircraft was carried out by Everglades park staff from 1958–2014, using the same basic protocol of observing individuals and nests. Each nesting area was surveyed monthly over the five-to-seven-month nesting season. Monitoring was less frequent in just four years (1980, 1981, 1984, and 1985) because of vacant positions among the park’s biology staff. Recent park eagle research has included studying blood chemistry and tracking eagle movements by satellite.⁶¹⁸

⁶¹⁴ DDE is one of the more common byproducts when the pesticide DDT [dichlorodiphenyltrichloroethane] breaks down in the environment.

⁶¹⁵ William B. Robertson and John C. Ogden, Population Dynamics of Bald Eagles in Everglades National Park, n.d. [1969], EVER 42242, ser. IV; “Glades May Save Eagles,” *Miami Herald*, July 24, 1963; FWS, *Southeastern States Bald Eagle Recovery Plan* (Atlanta: FWS, August 1984).

⁶¹⁶ In federal law, the term “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Endangered Species Act, section 3(18).

⁶¹⁷ 32 Fed. Reg. 4001; “Removing the Bald Eagle in the Lower 48 States from the List of Endangered and Threatened Wildlife,” 72 Fed. Reg. 37346–37372; Institute of Wildlife Sciences, Inc., <http://www.instwildlifesciences.org/eagle2.html>.

⁶¹⁸ Lori Oberhofer, personal communications, Oct. 30, 2013, and July 3, 2014; John D. Baldwin, Jason W. Bosley, Lori Oberhofer, Oron L. Bass, and Brian K. Mealey, “Long-Term Changes, 1958–2010, in the Reproduction of Bald Eagles of Florida Bay, Southern Coastal Everglades,” *Journal of Raptor Research* 46, no. 4 (2012): 338–39. Funding shortfalls limited the aerial surveys in 2013/2014 to runs over Florida Bay.

Brown Pelican

The eastern brown pelican (*Pelecanus occidentalis occidentalis*) is a large grey-brown water bird with white head and neck feathers that can reach a weight of up to eight pounds and a wingspan up to seven feet (figure 12–6, brown pelican). The bird feeds by plunge diving for fish in ocean waters, rarely venturing more than twenty miles from shore. In Florida, brown pelicans nest in trees or on the ground, mostly on mangrove islands and other small islands. Nesting sites are scattered widely throughout the state; in 1983, FWS estimated that 5 percent of Florida nesting sites were within Everglades National Park. In the late 1950s, brown pelican populations in Texas and Louisiana declined dramatically because of the effects of the use of organochlorine pesticides. The pesticides killed birds directly and also reduced reproductive success by thinning the thickness of eggshells. Populations in South Florida seem not to have suffered as much as those farther west.⁶¹⁹



Figure 12–6, brown pelican

The FWS placed the brown pelican throughout its U.S. range on the list of endangered species on October 13, 1970. A recovery plan for the eastern brown pelican was published on August 1, 1980. As mentioned, the pesticide DDT was banned in the U.S. in 1972, and the use of other pesticides sharply curtailed. As a result, the shell thickness of pelican eggs (as well as osprey and bald eagle eggs) increased. Brown pelican populations stabilized or rebounded in many areas. As of February 4, 1985, the FWS removed the pelican on the Atlantic and Gulf Coasts from endangered status, with the exception of Texas, Louisiana, and Mississippi. In the southeastern states, including all of Florida, the bird was “at or above historical breeding levels and has stable population numbers and productivity.”⁶²⁰ The greatest remaining threat to the pelican is loss of suitable breeding ground.

⁶¹⁹ “Removal of the Brown Pelican in the Southeastern United States from the List of Endangered and Threatened Species,” 50 Fed. Reg. 4938–4945 (Feb. 4, 1985).

⁶²⁰ 50 Fed. Reg. 4938–4945 (Feb. 4, 1985).

Reintroduced Birds

Before the park's establishment, wild turkeys and a number of other bird species resided in pine uplands in South Florida. Traditionally, turkeys were an important source of food for Everglades residents. As early as 1911, Seminole Billie Bowlegs lamented that turkeys were getting harder to find (figure 12–7, wild turkey). More and more pineland was lost to development after World War II. Between park establishment and the 1970s, turkeys and six other birds (eastern bluebirds, brown-headed nuthatches, southeastern American kestrels, red-cockaded woodpecker, hairy woodpecker, and summer tanager) disappeared from upland areas of the park. The park began to look toward reintroducing species. A 1971 attempt to reintroduce turkeys to Long Pine Key was unsuccessful, probably because hunting was still taking place on the private property in the Hole-in-the-Donut. Any turkeys that wandered into the fields on private land likely were shot.⁶²¹



Figure 12–7, wild turkey

In the 2000s, the park renewed its efforts to reintroduce wild turkeys (*Melagris gallopavo osceola*), eastern bluebirds (*Sialia sialia*), and brown-headed nuthatches (*Siarta pusilla*). In January 2000, twenty-two female and seven male turkeys were released on Long Pine Key. Most died quickly, but six years later, one of the original males and five to six from subsequent generations were known to be present. By the 2000s, prescribed burns in the pinelands were likely more successful than previously in maintaining turkey habitat. In January 2006, another twenty-five birds were released on Long Pine Key.⁶²²

⁶²¹ “Billie Bowlegs and Sister Visit Kissimmee Friends,” unidentified newspaper, 1911, Moore-Willson papers, box 66; Experimental Reintroduction of the Florida Wild Turkey Fact Sheet, Jan. 4, 2006, EVER 22965; Oron Bass, personal communication, Oct. 29, 2013.

⁶²² Experimental Reintroduction Fact Sheet; “Back to Roots,” *Miami Herald*, Jan. 8, 2006.

Following Hurricane Andrew in 1992, park scientists noted that the downing of trees caused by the storm might be a boon to cavity-nesting birds, such as bluebirds and nuthatches. In May 1997, a bird watcher observed two bluebirds, the first park sighting in more than three decades. The park then decided to transplant bluebirds and nuthatches from Big Cypress to Long Pine Key in hopes of establishing breeding populations. All translocated birds were tagged. By 2001, breeding populations of about twenty-five individuals of each species were present on Long Pine Key.⁶²³

Freshwater Fishes

The freshwater marshes, alligator holes, solution holes, creeks, and rivers of the Everglades are home to about thirty species of native freshwater fishes. The smaller marsh fishes are predominantly killifishes (Cyprinodontidae), livebearers (Poeciliidae), and juvenile sunfishes (Centrarchidae). Among the most abundant are the bluefin killifish (*Lucania goodei*), the least killifish (*Heterandria formosa*), the eastern mosquitofish (*Gambusia holbrooki*), and the flagfish (*Jordanella floridae*). Deeper waters, notably alligator holes, support larger species: the Florida gar (*Lepisosteus platyrhincus*), the yellow bullhead (*Ameiurus natalis*), adult sunfishes, and the occasional largemouth bass (*Micropterus salmoides*). Before drainage, the annual winter drydown of the Everglades acted to concentrate fishes in solution holes, alligator holes, and the headwaters of rivers. When the wet season came, the surviving fish would then spread out again as the marshes flooded. A succession of unusually dry years might dramatically reduce fish populations, but they usually would recover after several years of more normal rainfall. With the implementation of the Central and Southern Florida Flood Control Project, hydroperiods generally became shorter, with their duration largely determined by water management decisions. Small freshwater fishes are an important prey source for most Everglades wading birds, alligators, and some mammals, such as raccoons. The artificial drainage system not only changed the hydroperiods in the Everglades but also created canals, areas of deeper water that never dried up. These became places where small fishes could seek refuge in the dry season, but they also were tailor-made conduits for the introduction of nonnative fish species into the Everglades (see Chapter 14).⁶²⁴

Before the 1950s, no attempts were made to study the numbers and species of Everglades freshwater fishes. As part of the park's arrangement with the University of Miami, J. B. Reark studied fish density and biomass in the Shark River Slough, producing reports in

⁶²³ "Naturalists' Hopes Soar as Bluebirds Appear in the Glades," *Miami Herald*, May 25, 1997; Songbird Reintroduction Executive Summary, Sept. 15, 1997, EVER 42242; "Everglades' Pine Rockland Is Once Again for the Birds," *Miami Herald*, Apr. 16, 2001.

⁶²⁴ William F. Loftus and Anne-Marie Eklund, "Long-term Dynamics of an Everglades Small-Fish Assemblage," in *Everglades: the Ecosystem and Its Restoration*, edited by Steven M. Davis and John C. Ogden (Delray Beach, FL: St. Lucie Press, 1994), 461–63.

1961 and 1962. These were the only quantitative studies of marsh fishes prior to the closing of the gates of Water Conservation Area 3. All subsequent studies of Everglades freshwater fishes took place in an environment of managed water deliveries. From 1965 to 1972, the NPS had a contract with the USGS to conduct sampling in the Shark River Slough. This work was designed to relate the composition and populations of aquatic animal communities (fishes, crayfish, apple snails, and shrimp) to hydrological changes. With the establishment of the South Florida Research Center in 1976, the park began a long-term program to study the aquatic ecosystem, including freshwater fishes.⁶²⁵

When James Kushlan was hired at the South Florida Research Center, he developed a throw trap that was a significant improvement over the fixed traps used previously. This one-meter-square trap is portable and is thrown into the water, quickly confining the fish assemblage. Once the trap is closed, technicians remove the trapped fish and macro-invertebrates with dip nets. Kushlan also developed a conversion factor to correct for the biases of the fixed nets, so that data from the USGS monitoring could be compared with data obtained with the throw trap. Monitoring of marsh fishes with the throw trap has been carried on continuously in the park since the 1970s. Kushlan's trap has also been adopted all over the world. The throw trap does not allow for accurate sampling of larger fishes, which are more widely dispersed. Since 1997, the park has supplemented throw-trap monitoring with electrofishing. Electrofishing involves temporarily stunning fish with electric current so that counts of larger fish can be made. Almost all of the stunned fish recover unharmed within a minute or two.⁶²⁶

The consistent monitoring of marsh fishes over a period close to forty years has provided valuable data to evaluate the effects of changes in water management regimes. This kind of data has been and will continue to be used in computer modeling and the development of performance measures to assess the effectiveness of components of the Comprehensive Everglades Restoration Plan (see Chapter 28).⁶²⁷

⁶²⁵ Joel C. Trexler, William F. Loftus, and John H. Chick, "Setting and Monitoring Restoration Goals in the Absence of Historical Data: The Case of Fishes in the Florida Everglades," in *Monitoring Ecosystems: Interdisciplinary Approaches for Evaluating Ecoregional Initiatives*, edited by David E. Busch and Joel C. Trexler (Washington, DC: Island Press, 2003), 354–56.

⁶²⁶ Trexler, Loftus, and Chick, 357; Loftus and Eklund, 464;

James Kushlan, interview by author, May 25, 2012. James Kushlan has described his trap as "a horrible device to use. You have to stand out in the swamp all day throwing the trap ten to fifteen times and then digging all the fish out with thirty or so dip net sweeps, all for a sample. Generations of technicians around the world have hated that trap, but it's very useful, very effective."

⁶²⁷ Jeff Kline, personal communication, June 28, 2013.

Alligators

The alligator (*Alligator mississippiensis*) historically was present in large numbers in Florida. In the 1760s, naturalist William Bartram saw them so thick in the St. Johns River that he claimed one could walk across the stream on their backs. By the late 1940s, alligators were reduced in number across much of their range in the southern U.S., largely because they were intensively hunted for their hides. By contrast, they seem still to have been present in reasonably large numbers in Everglades National Park. Biologist Frank C. Craighead wrote that in the mid-1950s it was not uncommon to see fifty to 100 gators during the course of a five- or six-hour boat excursion on the tributaries of the Shark, Northeast, and Rogers Rivers.⁶²⁸

A number of factors in the 1960s, notably the closing of the gates for WCA 3, stressed alligator populations in the park. The interruption of the previous water regime disrupted the alligator life cycle. Too little water dried up the landscape and deprived gators of food sources. After female alligators had laid their eggs, too much or too little water could flood or desiccate nests. The severe drought of the first half of the 1960s wreaked havoc on gators in the park, prompting managers to take some drastic measures. As the Everglades gradually dry out in the winter months, fish, crustaceans, and other small animals become concentrated in deeper pools. Some of these pools, known as alligator holes, are created by alligators themselves. In winter 1964/65, all but the deepest pools dried up. To compensate, the park created artificial pools by blasting holes six to seven feet deep into the limestone underlying the Shark Slough. Demolition experts from Homestead Air Force Base assisted in this project. The project had some success; managers supplemented it by moving eighty-three gators from dry to wet areas and bringing in fish to feed them (figure 12–8, relocating an alligator, 1960s). The blasting of artificial gator holes was repeated in March 1969, but did not continue beyond that date. The record is silent on why the blasting stopped. It can be surmised that managers realized that only a few alligators could be protected. In addition, the NPS in 1974 proposed that most of the park be designated as wilderness, and blasting was clearly an inappropriate wilderness activity.⁶²⁹

The Florida alligator population overall rebounded quickly after the 1969 amendments to the Lacey Act largely put an end to the hide trade. As expanding gator numbers increasingly interacted with expanding human populations, the state of Florida began a nuisance alligator program in 1978 and opened a limited hunting season in 1981.

⁶²⁸ F. C. Craighead, "The Role of the Alligator in Shaping Plant Communities and Maintaining Wildlife in the Southern Everglades," *The Florida Naturalist* 41, no. 1 and 2 (Jan. and Apr. 1968): 2–7, 68–74, 94.

⁶²⁹ SMR, May and June 1965; "It's Only Way to Save Their Lives," *Miami Herald*, May 23, 1965; Supt. to RDSE, Aug. 13, 1965, Nara II, RG 79, NPS AF, box 2331; Mgmt. Biologist Klukas to Ranger-Pilot, Mar. 10, 1969, EVER 307996.

Everglades National Park in 1979 instituted a program for managing “problem alligators.” When the program was reviewed a few years later, it was noted that from 1972 through 1982, only twenty-seven instances of aggressive alligator behavior had been reported. The report recommended continuing to educate visitors about alligators, enforcing prohibitions on feeding the gators, and as a last resort, relocating troublesome alligators to other park areas. The recovery of the alligator throughout Florida is a major success story for a previously stressed species. Alligators in South Florida, including those in Everglades National Park, tend to have lower growth rates, delayed sexual maturity, and smaller clutch sizes than alligators farther north. The primary reason is that the nutrient-poor environment of the Everglades region provides alligators with a diminished food supply compared to regions to the north.⁶³⁰



Figure 12–8, relocating an alligator, 1960s

⁶³⁰ Martha A. Strawn, *Alligators: Prehistoric Presence in the American Landscape* (Baltimore: Johns Hopkins University Press, 1997), 142; Terri Jacobsen and James A. Kushlan, Draft “Evaluation of the Management of Problem Alligators in Everglades National Park,” Oct. 1983, EVER-00619; Draft Alligator Overview, n.d. [ca. 1994], EVER 42242, ser. VI, subser. A, subser. 2; Oron Bass, personal communication, Oct. 29, 2013.

The FWS listed the alligator as endangered throughout its range in 1967, largely because it was still being harvested in considerable numbers. The species had recovered sufficiently by January 1977 for the service to reclassify it as threatened in Florida and other states. In June 1985, the service changed the status to “threatened by similarity in appearance.” The hides of alligators resemble those of other crocodylians, some of which are endangered. This similarity makes identification of particular specimens in the hide trade difficult. The threatened-by-similarity classification allowed the service to continue to issue regulations pertaining to alligator hides under the ESA, even though it no longer considered the alligator to be at risk of becoming endangered.⁶³¹

Crocodiles

The American crocodile (*Crocodylus acutus*) is a large reptile, grayish brown and mottled with black, which reaches lengths of seven to twelve feet (figure 12–9, American crocodile). South Florida is at the extreme northern end of the range of the species, which is found in greater numbers in the waters of Cuba, Jamaica, Hispaniola, and the Caribbean coast from Venezuela to the Yucatan. Historically, crocodiles occurred in Florida as far north as Lake Worth in Palm Beach County, while their main nesting grounds were the shores of Biscayne and Florida Bay and the upper Florida keys.⁶³²



Figure 12–9, American crocodile

In 1938, Dan Beard feared that as few as fifty to seventy-five crocodiles were present in Florida waters. In the early 1970s, the species appeared to be nesting only in a small area of northeastern Florida Bay and northern Key Largo. The estimated population was between 100 and 400 individuals. Concerned about poor nesting success, the park

⁶³¹ 50 Fed. Reg. 25672.

⁶³² Paul E. Molar, ed., *Rare and Endangered Biota of Florida*, vol. III. *Amphibians and Reptiles* (Gainesville: University Press of Florida, 1992), 83–85.

experimented with incubating and hatching crocodile eggs. Managers were encouraged when they successfully hatched about ten baby crocodiles in a nesting box in 1969. In 1975, the park began planning an expanded artificial nesting program. Assistant Chief Ranger James Olson visited the Everglades Wonder Gardens in Bonita Springs to see whether a breeding program using the gardens' existing adult crocodiles could supply juveniles to the park.⁶³³ Garden owners Les and Bill Piper showed some interest, but the park opted to do its own breeding program. Rangers removed eggs from crocodile nests that seemed to have poor prospects for producing hatchlings and placed them in an incubator at the park. The experiment was not a success. A 1978 report by John L. Behler of the New York Zoological Society concluded that a captive breeding program was feasible, but the park did not try again.⁶³⁴

After the failure of the artificial nesting program, the park in 1980 established a crocodile sanctuary (special protection zone) that embraced Little Madeira Bay, Joe Bay, Taylor River, East Creek, Mud Creek, and Davis Creek. Females were known to construct earthen nests on the shores of these waters, and the areas were closed to public entry. The sanctuary was unpopular with some fishermen, and the park revisited the status of the sanctuary in 1990. There was some evidence that crocodiles had extended their nesting grounds, but the park concluded that it would not be prudent to make any changes to the existing sanctuary. Over time, the park has increasingly justified the special protection zone as an area where scientists can study natural processes unaffected by human intrusion. The protected area serves as a baseline against which changes in unprotected areas can be measured. In public discussions that were part of developing the park's draft general management plan, some community members called for reopening portions of the sanctuary, particularly Joe Bay. There was little or no sentiment for expanding the special protection zone, and the preferred alternative in the GMP calls for maintaining it as is. See Chapter 26 for the evolution of the park's GMP.⁶³⁵

Believing that only ten to twenty breeding females existed in Florida, the FWS listed the crocodile as endangered throughout its Florida range on September 25, 1975. It then established critical habitat for the species as of September 24, 1976. The habitat embraced the very southern end of Biscayne Bay, most of Florida Bay, and all of the Florida keys from Old Rhodes Key to Long Key. In early 1979, the Fish & Wildlife

⁶³³ The Everglades Wonder Gardens, opened in the late 1930s, was one of the earliest tourist-oriented nature attractions in South Florida. Its history is recounted in Charles LeBuff, *Everglades Wildlife Barons: The Legendary Piper Brothers and Their Wonder Gardens* (Sanibel, FL: Ralph Curtis Publishing, 2010).

⁶³⁴ Beard, *Wildlife Reconnaissance*, 87; "Everglades Park Biologists Work to Save American Crocodile," NPS press release, Sept. 26, 1969, EVER 22970; Howard W. Campbell, FWS, Gainesville Station, to Gary Hendrix, Chief Biologist, ENP, Dec. 23, 1975, EVER 42242, ser. IV; John L. Behler, *Feasibility of the Establishment of a Captive-Breeding Population of the American Crocodile* (Homestead, FL: SFRC, 1978).

⁶³⁵ Skip Snow, "An Assessment of Recreational Boating and its Potential Impact on Resources within the Crocodile Sanctuary of Everglades National Park," Jan. 8, 1991, EVER 42242, ser. VI, subser. A, subser. 2; NPS, *Draft GMP*; Fred Herling, personal communication, Aug. 21, 2013.

Service published an *American Crocodile Recovery Plan*. The recovery team included three Everglades National Park members: Richard Klukas, Dr. William B. Robertson, and Dr. James A. Kushlan. The major goal of the plan was to “establish self-sustaining populations at natural carrying capacity in appropriate habitats” through research, captive breeding, habitat protection, and public education. The recovery plan was updated as part of the MSRP of May 18, 1999. By 2005, the crocodile had expanded its breeding range, with nesting at the Turkey Point Nuclear Plant complex on Biscayne Bay and farther west along Florida Bay. The FWS changed the status of the species to threatened, effective April 19, 2007. Individuals have been spotted as far north as Tampa Bay, and the total population may have reached 2,000 before a cold snap in early 2010 killed at least 150 crocodiles. The current population estimate is about 1,500.⁶³⁶

Eastern Indigo Snake

The eastern indigo snake (*Drymarchon couperi*) is a long, thick-bodied snake, reaching lengths of five to six feet in adults (Figure 12–10, park aide with an indigo snake). Adults are iridescent black and have throat markings of red, coral, or white that may extend onto the belly. Historically, the snake was found throughout Florida and the coastal plain of Georgia, Alabama, and Mississippi. Today, the species is largely confined to peninsular Florida and forty counties in Georgia. The snake makes use of a wide range of habitats, including pine uplands and flatwoods, dry prairie, hardwood hammocks, the edges of freshwater marshes, agricultural lands, and the banks of canals. Within Everglades National Park, it has most often been reported in and near Long Pine Key, on former agricultural lands in the Hole-in-the-Donut, and on keys in Florida Bay. Within the park, the snake’s prey includes cotton rats, toads, turtle eggs, and several snake species. The indigo snake needs subsurface refuges and often makes use of gopher tortoise burrows. Indigo snakes have large activity ranges (up to 3,000 acres) and are elusive, making it impossible to arrive at reliable population censuses and trends.⁶³⁷

⁶³⁶ 40 Fed. Reg. 44149–44151 (Sept. 25, 1975); 41 Fed. Reg. 41914–41916 (Sept. 24, 1976); “Reclassification of the American Crocodile Distinct Population Segment in Florida from Endangered to Threatened, Final Rule,” 71 Fed. Reg. 13027–13041; “More Crocs, and More Nervous Gulps: Once-Endangered Reptile on Rebound; Floridians Anxious as Encounters Grow,” *Chicago Tribune*, April 25, 2012.

⁶³⁷ FWS, *Eastern Indigo Snake (Drymarchon couperi) 5-Year Review: Summary and Evaluation* (Jackson, MS: FWS, 2008); T. M. Steiner, O. L. Bass Jr., and J. A. Kushlan, *Status of the Eastern Indigo Snake in Southern Florida National Parks and Vicinity* (Homestead, FL: SFRC, 1983).

The FWS listed the eastern indigo snake as threatened throughout its range on January 31, 1978.⁶³⁸ A decline in population had been noted, attributable to habitat loss, overzealous pet collecting, and the gassing of gopher tortoise burrows to kill rattlesnakes. An eastern indigo snake recovery plan was issued April 22, 1982. No critical habitat has been established. Because development continues to fragment snake habitat, the FWS has maintained the threatened status. Given the need of the species for large home ranges, the unbroken expanse of Everglades National Park and other state and federal preserves may represent the best chance for the survival of the species. Within the park, the major threat to the snake is being run over by motor vehicles.⁶³⁹

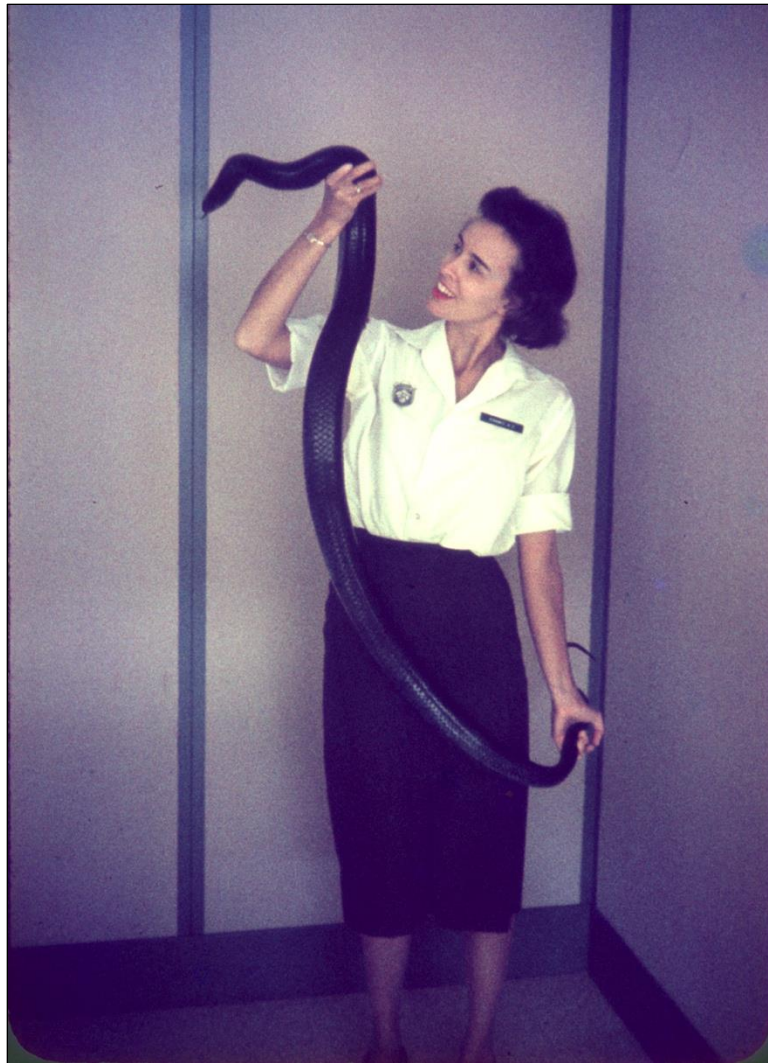


Figure 12-10, park aide with an indigo snake

⁶³⁸ At first listing, the snake was considered a subspecies, *Dyrnarchon corais couperi*, but it is now considered a separate species.

⁶³⁹ FWS, *Eastern Indigo Snake 5-Year Recovery Plan*, Steiner et al.

Sea Turtles

Among the most majestic of ocean dwellers are the seven existing species of sea turtle. Of these, only the loggerhead (*Caretta caretta*) is known to nest consistently in Everglades National Park. The green turtle (*Chelonia mydas*), hawksbill turtle (*Eretmochelys imbricata*), Atlantic Ridley turtle (*Lepidochelys kempi*), and leatherback turtle (*Dermochelys coriacea*) are occasional visitors in park waters (figure 12–11, green sea turtle). Loggerheads are found in a number of places around the world, but the population in each ocean basin is genetically distinctive. The population that nests from Virginia to the Yucatan Peninsula has been designated the Northwest Atlantic distinct population segment (DPS). Within this DPS, more turtles nest on Florida beaches than anywhere. The broad Cape Sable beaches within the park are prime loggerhead nesting territory. As beachfront development farther north along the Gulf Coast destroyed habitat, more females seem to have begun nesting within the park. Mature loggerheads range up to four feet in shell length and 440 pounds; they have powerful jaws and feed mostly on mollusks and crustaceans.⁶⁴⁰



Figure 12–11, green sea turtle

The loggerhead turtle was listed as threatened throughout its range under the ESA on July 28, 1978. The National Marine Fisheries Service and FWS published a recovery plan for the Northwest Atlantic population in 1984; the plan was revised in 1991 and 2008. As of this writing, critical habitat has not been designated. A status review for the species was undertaken in 2009, which concluded that the Northwest Atlantic population is “likely to decline in the foreseeable future,” largely because of accidental turtle mortality associated with the active commercial fishery operations in the Atlantic and Gulf of Mexico. The review found a continued risk of extinction and recommended no change in the endangered status.⁶⁴¹

⁶⁴⁰ James R. Spotilla, *Sea Turtles: A Complete Guide to Their Biology, Behavior, and Conservation* (Baltimore: Johns Hopkins University Press, 2004), 6–7, 164–67; T. A. Conant, et al., *Loggerhead Sea Turtle (Caretta caretta) 2009 Status Review under the U.S. Endangered Species Act. Report of the Loggerhead Biological Review Team to the National Marine Fisheries Service* (N.p.: National Marine Fisheries Service, August 2009), 10, <http://www.nmfs.noaa.gov/pr/pdfs/statusreviews/loggerheadturtle2009.pdf>.

⁶⁴¹ 43 Fed. Reg. 32800; National Marine Fisheries Service and FWS, *Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle (Caretta caretta)*, 2nd rev. (Silver Spring, MD: National Marine Fisheries Service, 2008); Conant et al., 43–44, 164.

Depredation of loggerhead turtle nests by raccoons has been a consistent cause of concern for park managers. In 1964, rangers noted that about 70 percent of turtle nests at Cape Sable had been destroyed by raccoons. It is possible that raccoon populations had increased after the park was established because hunting was banned. The park began a live trapping program in 1966, removing and relocating 113 raccoons. The park continued the trapping for a few years but never brought the destruction rate below 50 percent. By 1974, managers noted that the nesting activity had noticeably increased, and raccoon relocation stopped. In an effort to better understand turtle behavior, park personnel began tagging loggerhead turtles in 1973.⁶⁴²

In the 1960s, the park attempted to encourage nesting of the green turtle within the park. Historically, green turtles have nested primarily on Florida's Atlantic Coast. From 1963 through 1966, under the direction of sea turtle expert Dr. Archie Carr, several thousand hatchlings were brought from the Caribbean Conservation Corporation's hatchery in Costa Rica and released in shallow waters in the park (figure 12-12, green turtle hatchlings for release in the park). The hope was that the mature females would return to beaches in the park to nest, but it appears that none did.⁶⁴³



Figure 12-12, green turtle hatchlings for release in the park

⁶⁴² Supt. Joseph to RDSE, Dec. 21, 1964, NARA Ph, RG 79, 79-70-A-4751, box 80; Annual Wildlife Report for ENP, Apr. 20, 1967, Apr. 25, 1968, May 19, 1969, Apr. 28, 1970, Apr. 30, 1973, EVER 42242, ser. VI, subser. A, subser. 2.

⁶⁴³ "Release of Turtles," ENP press release, Sept. 27, 1963, NARA Ph, RG 79, 79-70-A-4751, box 80; SMR, Sept. 1963, Sept. 1964, Sept. and Dec. 1965, Oct. 1966.

Florida Tree Snail

The Florida tree snail (*Liguus fasciatus*) is a large (two- to three-inch) snail with a conical shell (figure 12–13, *Liguus* tree snail). It can be all white or cream in color, but more often has brightly colored bands of yellow, brown, pink, blue, or green. In the past, some researchers identified snail subspecies based on color forms and shell shapes. Recent genetic sampling has led scientists to consider all color forms as belonging to a single species. More than fifty different color variants have been identified, some of which are now extinct. The snail lives mostly on smooth-barked trees on hardwood hammocks on the mainland and keys in the four southernmost counties of Florida. The Florida snail is a subspecies of a tree snail (*Liguus fasciatus fasciatus*), which is native to Cuba. The animal is dormant in the dry season from December to April or May. The state of Florida has designated the tree snail a species of special concern; it has no federal protection. The three main threats to the Florida tree snail are habitat loss as South Florida has become increasingly urbanized, the red imported fire ant, and wildland fire. The red imported fire ant (*Solenopsis invicta*) is an aggressive insect that has been observed killing tree snails (see Chapter 14 for more on fire ants). Snails are unable to flee hammock fires, and color variants that live on only one hammock can be wiped out. On larger hammocks, however, fire may aid the snails by keeping the canopy more open, thus stimulating the growth of lichens and algae on tree bark, the snails' food source.⁶⁴⁴



Figure 12–13, *Liguus* tree snail

⁶⁴⁴ Fred H. Sklar and Arnold Van der Volk, ed., *Tree Islands of the Everglades* (Dordrecht, Netherlands: Kluwer Academic Publishers, 2003), 395; USGS, Florida Tree Snail, http://fl.biology.usgs.gov/sofla/Tree_Snail/General_Biology/general_biology.html; Jason R. Fadely, “Population Distribution of *Liguus fasciatus solidus* in Long Pine Key of Everglades National Park” (master’s thesis, Florida Atlantic University, 2009), 9–10, http://digitool.fcla.edu//exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2R0bC9kM18xL2FwYWNoZV9tZWRpYS8xODcyMDk=.pdf.

When Dan Beard prepared his 1938 *Wildlife Reconnaissance*, South Florida had developed a small coterie of tree snail collectors or “lig hunters.” One collector, Archie Jones, recalled that he began collecting in about 1934. Beard noted that the collectors “vie with each other for the rarest and most beautiful species [i.e., color variants] just like stamp collectors.” Jones recalled that at the height of the collecting trend, there were perhaps twenty to twenty-five serious collectors, one of whom had as many as 100,000 shells in his collection. Beard felt that the serious and responsible collectors performed a service by identifying and preserving color variants.⁶⁴⁵

Shortly after the park’s establishment, collectors Archie Jones, Ralph Humes, and C. C. Von Paulsen visited Superintendent Beard and voiced their concerns over the risk of elimination of many color forms. They were particularly worried about snails in the keys, where U.S. 1 gave collectors easy access to the hammocks that were home to the snails. Humes proposed that they transplant threatened color variants to hammocks in the park that had no resident snails. Beard liked the idea and assigned Ranger Erwin Winte to work with the group. The four men spent thousands of hours searching for rare color forms and for suitable hammocks in the park where they could be introduced. Because of the long distances involved, the collectors temporarily kept snails on a hammock near the park’s main entrance for later pick-up and delivery to a new home. Late in his life, Jones recalled that they were sensitive to the risk of accidentally producing new hybrid color forms. When they detected such a hybrid, they attempted to kill all individuals. Inevitably, some hybrid forms survived and became established. From the early 1950s through the mid-1960s, Jones recalls transplanting some fifty-two color variants to 224 hammocks within the park. The group also apparently raised snails in colonies and referred to a “Cuban-type hybrid,” suggesting that they may have crossbred Cuban and Florida individuals. Participants in the introduction effort have color variants named for them; *archiejonesi*, *beardi*, *humesi*, *vonpaulseni*, and *winte*. A number of *Liguus* collectors eventually donated specimens from their collections to the park.⁶⁴⁶

⁶⁴⁵ Beard, *Wildlife Reconnaissance*, 61; Archie L. Jones, interview with Nancy Russell and Oron Bass, Sept. 20, 2006. In his interview, Jones described how he conducted his collecting trips. He traveled light, with a sandwich and as much water as he could carry, a telescoping bamboo pole for reaching specimens high in trees, and a cloth collecting bag fashioned by his wife.

⁶⁴⁶ Archie L. Jones, interview with Nancy Russell and Oron Bass, Sept. 20, 2006; SMR, Oct. 1957, June 1962, Feb. 1963; Erwin Winte, Supervisory Park Ranger, to Supt. Joseph, June 30, 1965, NPS, WNRC, 79–85–8; “The Shell Game,” *Miami Herald*, Nov. 2, 1997; Fadely, 7.

Butterflies

Butterflies have long attracted the attention of naturalists and collectors and are now known to be important indicators of ecological conditions. They typically respond to environmental changes more rapidly than larger animals. Many butterfly species rely on a single plant as a larval host and a different single plant as a source of nectar as an adult. Changes in the numbers of host and nectar plants obviously affect butterfly populations. Butterfly populations also are highly sensitive to weather events (notably, in South Florida, hurricanes), pesticides, and the effects of fire on their habitat. Butterfly conservation is a relatively new concept, and park staff gave little attention to butterflies until the late 1970s. It is likely that in early years, ignorance of butterfly life cycles resulted in park mowing and brush-clearing practices detrimental to butterflies and their host and food plants. In addition, for many years, prescribed burns in the park's pinelands were conducted without considering the effects on butterflies.⁶⁴⁷

In June 1980, Barbara Lenczewski, a biologist working in the SFNRC, produced the first checklist of butterflies for Everglades National Park. Her report was based on two years of field collecting and extensive research in scientific literature and among butterfly collections in Florida. For each of ninety-nine species, Lenczewski noted the date first reported in the park, habitat, food plants, and distribution. In 1998 and 1999, SFNRC Ecologist Sue Perry and her son Michael Perry did butterfly counts in the park. In addition, from 1998 through 2008, Sue Perry and FWS Lepidopterist Mark Salvato recorded butterfly observations in the park (figure 12–14, Bartram's hairstreak butterfly). Perry's goals were to determine the status and locations of imperiled butterfly species within the park so that this information could be considered in resource management decisions. Perry's work culminated in her May 2009 "Report: Status of Butterflies in Everglades National Park."⁶⁴⁸

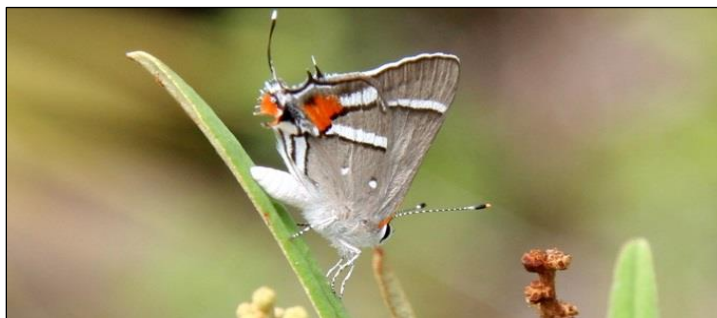


Figure 12–14, Bartram's hairstreak butterfly

⁶⁴⁷ Sue Perry, "Report: Status of Butterflies in Everglades National Park" (Homestead, FL: SFNRC, May 2009), 1–2.

⁶⁴⁸ Barbara Lenczewski, *Butterflies of Everglades National Park* (Homestead, FL: SFRC, June 1980), 1–2; Perry, 11–15

The major threats to most butterfly species in South Florida are habitat destruction and mortality incidental to pesticide spraying for mosquitoes and other pests. Populations of a number of South Florida butterfly species have dropped sharply in recent decades. Some twenty-eight species that Lenczewski recorded as having been observed historically were not observed by Perry and Salvato in the park from 1998 through 2008. They did observe five new species, including two that were new arrivals to South Florida from Caribbean islands. The imperiled butterfly species listed by Perry as occurring in the park are listed below. Most were observed primarily in the pinelands of Long Pine Key.

Florida white (*Appias drusilla neumogennii*)
Bartram's scrub-hairstreak (*Strymon acis bartrami*)
Silver-banded hairstreak (*Chlorostymon simaethis*)
Florida leafwing (*Anaea troglodyta floridalis*)
Florida duskywing (*Ephyriades brunnea floridensis*)
Cuban crescent (*Anthanassa frisia*)—apparently a stray at Flamingo
Tropical buckeye (*Junonia genoveva*)
Berry's skipper (*Euphyes berryi*)
Palmetto skipper (*Euphyes arpa*)⁶⁴⁹

Additionally, three imperiled species that had been observed historically appeared by 2008 to have been extirpated within the park, although they were known to be present elsewhere in South Florida. These were the Schaus swallowtail (*Heraclides aristodemus panceanus*), the Miami blue (*Hemiargus thomasi bethunebakeri*), and the atala (*Eumaeus atala florida*).

The FWS has acted to protect several South Florida butterfly species. Once found from South Miami to Lower Matecumbe Key, the Schaus swallowtail is known to breed in Biscayne National Park and may be a casual visitor in Everglades National Park. The FWS listed the species as threatened on April 8, 1976, and reclassified it as endangered on August 31, 1984. A recovery plan was approved November 17, 1982, and updated on May 18, 1999, as part of the MSRP. The Miami blue once was endemic to South Florida and gave its name to the local chapter of the North American Butterfly Association. In 1980, Lenczewski reported that it no longer occurred in Everglades National Park, although individuals had been collected at Flamingo as late as 1972. By 2007, only a few colonies, one in Bahia Honda State Park and others in the Florida Keys National Wildlife Preserve, were known to exist. The FWS listed the Miami blue as endangered on April 6, 2012, and committed to preparing a recovery plan. In the same action, it listed three species as threatened due to similarity of appearance: the cassius blue butterfly (*Leptotes cassius theonus*), the ceraunus blue butterfly (*Hemiargus ceraunus antibubastus*), and the nickerbean blue butterfly (*Cyclargus ammon*). On August 6, 2013, the FWS announced its intention to list as endangered the Florida leafwing (thought to

⁶⁴⁹ "Tropical Butterfly Colonies Disappearing," *Miami Herald*, Oct. 22, 2007; Perry, 1–3, 12.

exist only in Everglades National Park) and the Bartram's scrub-hairstreak and to designate critical habitat for the two species. In May 2014, the FWS reopened the comment period for these proposed actions; no final rule has been published as of this writing.⁶⁵⁰

To help protect threatened butterfly populations, the Florida Fish and Wildlife Conservation Commission in 2003 formed the Imperiled Butterflies of Florida Working Group (IBWG). Group members include local, state, and federal agencies (including the NPS and the FWS), the University of Florida, and the North American Butterfly Association. NPS scientists coordinate their butterfly conservation activities with the IBWG. Among the group's activities have been attempts to reintroduce species in portions of their former ranges where they no longer occur. The Miami Blue Chapter of the North American Butterfly Association has taken an active role in encouraging Everglades National Park to make butterfly conservation a factor in management decisions on mowing, brush clearing, prescribed fire, mosquito spraying, and the setting of speed limits on park roads.⁶⁵¹

Everglades National Park managers have taken some steps in recent years to protect populations of imperiled butterflies. Butterfly conservation is complex, partly because generalizations across species cannot be made; species-specific and even site-specific information often is required. In 2004, Sue Perry began a program to reintroduce the Miami blue and the atala in Everglades National Park and Biscayne National Park. Perry and others developed a programmatic document for planting butterfly host plants and began implementing it in Shark Valley by placing laboratory-bred larvae on the plants. Her team also developed interpretive signs and handouts to help educate visitors about butterfly life cycles and conservation. The new colonies in the park, however, did not last beyond two generations. Conclusive reasons for the failure of the reintroductions are not known, but drift from mosquito spraying and the 2005 hurricanes are believed to have been factors. The fire management team at the park has been working with the IBWG to adjust prescribed burn practices to minimize destruction of host plants and butterfly larvae. Mortality from pesticides is a more difficult issue. Mosquitoes are a menace to staff and visitors in the summer months, and spraying at Flamingo, in particular, is likely to continue, resulting in drift to mosquito habitat on the coastal prairies. Additionally, pesticides can drift into the park from beyond its borders. Finally, the potential effects of climate change and sea level rise on butterfly populations are largely unknown and are only beginning to be modeled.⁶⁵²

⁶⁵⁰ Perry, 2, 37; 49 Fed. Reg. 34501–34504; 77 Fed. Reg. 20948–20986; 78 Fed. Reg. 49878–4990 (Aug. 15, 2013); 79 Fed. Reg. 26392–26401 (May 8, 2014); Florida Fish and Wildlife Conservation Commission, Miami Blue Butterfly Management Plan Fact Sheet, June 23, 2010, http://share2.myfwc.com/IBWG/Lists/Announcements/Attachments/21/2010_Jun_MiamiBlueFactSheet.pdf.

⁶⁵¹ Perry, 2; “Tropical Butterfly Colonies Disappearing”; Dan Kimball, interview by author, Jan. 18, 2012.

⁶⁵² Sue Perry, Final Report, Planting of Native Plants for Butterflies, Oct. 2006, EVER 42242; “Endangered Butterflies Reintroduced to Wild,” *Miami Herald*, June 1, 2004; “Tropical Butterfly Colonies Disappearing”; 78 Fed. Reg. 49888; Perry, 2009, 33, 51–53. The presence of a Miami blue specimen in the South Florida Collections Management Center holdings was important evidence supporting the reintroduction effort.

Black Bear

The black bear (*Ursus americanus*) once inhabited all of eastern North America and was observed throughout the territory and state of Florida in a variety of habitats until well into the twentieth century. Bears were living as far south as Matecumbe Key in the late nineteenth century, and William Stafford noted that Royal Palm State Park was a population center in the 1910s. Dan Beard lacked enough data to include any observations on the bear in his 1938 *Wildlife Reconnaissance*. Bears, along with wading birds, Florida panthers, and manatees, were touted as attractions at the time of the park's 1947 dedication. The *New York Times* wrote that the animal was abundant in the Everglades, an exaggeration even at that time. Today, the animal survives in nine distinct populations scattered around the state. A population of several hundred bears is centered in the Big Cypress National Preserve and pineland and cypress swamp portions of Everglades National Park.⁶⁵³

Florida Panther

The Florida panther (*Puma concolor coryi*) has usually been described as a subspecies of the North American puma (also known as mountain lion, cougar, catamount, etc.). The designation of species and subspecies is subject to interpretation, and scientists do not agree on just how many subspecies of *Puma concolor* exist. A single puma species once ranged widely across North America, but growing human populations and habitat destruction have isolated various populations. The panther population in South Florida is the only remaining puma population east of the Mississippi River. A 2000 study of North American puma populations concluded that the genetic differences among populations were small enough that all previous North American subspecies should be subsumed under the single designation *Puma concolor cougar*. Not all scientists studying the Florida panther have accepted this conclusion, and the Florida Fish and Wildlife Conservation Commission continues to employ the *Puma concolor coryi* designation for the Florida panther (figure 12–15, Florida panther photographed from a remote camera).⁶⁵⁴

⁶⁵³ David S. Maehr, Thomas S. Hoctor, Luther J. Quinn, and Judith S. Smith, *Black Bear Habitat Management Guidelines for Florida, Technical Report No. 17* (Tallahassee: Florida Fish and Wildlife Conservation Commission, 2001), 1–2; “Florida’s New Park: Dedication of Everglades National Area Opens Unique Region to Tourists,” *New York Times*, Nov. 30, 1947.

⁶⁵⁴ M. Culver, W. E. Johnson, J. Pecon-Slattey, and S. J. O’Brien, “Genomic Ancestry of the American Puma (*Puma concolor*),” *Journal of Heredity* 91, no. 3 (2000): 186–97.



Figure 12–15, Florida panther photograph

Florida panthers are solitary predators, with an average range of about 200 square miles for males. There is little overlap in ranges among male panthers, so even a small population requires a large expanse of habitat. Because South Florida remained sparsely settled well into the twentieth century, the panther was able to hold on there after it was eliminated from other areas of the Southeast. With the great increase in South Florida’s human population after World War II, the panther’s preferred habitat of upland pine forest, swamp, and hammock vastly decreased. The construction of roads constrained its movements, and the numbers of its favorite prey, the white-tailed deer (*Odocoileus virginianus*), fell dramatically. As panthers grew fewer, they became increasingly inbred and subject to genetic problems. At the establishment of Everglades National Park, no one knew how many panthers survived in South Florida, but the best guess was fifty or fewer individuals. By the 1970s, it was believed that twenty or fewer adults remained. Panthers were more common in the Big Cypress Swamp, but they were present in Everglades National Park, and park managers were concerned about their prospects for survival.⁶⁵⁵

Early park efforts for the panther consisted of recording sightings and other evidence (tracks and scat) of the cat’s presence. In 1963, the park believed that perhaps ten or twelve panthers roamed the park. On several occasions in the 1960s and 1970s, park managers released animals bred in captivity by the Piper Brothers at the Everglades Wonder Gardens. In later years, when genetic testing became more precise, individuals in the Everglades panther population showed genetic markers from Latin American puma populations. The presumption is that the Pipers imported animals from other countries to

⁶⁵⁵ Florida Fish and Wildlife Conservation Commission, *Florida Panthers: Next Steps*, Sept. 5, 2012, 3, http://myfwc.com/media/2345993/4CFloridaPantherPlan_presentation.pdf; FFWCC, *Multi-Species Recovery Plan*, 4–117–120.

breed with their captive Florida panthers.⁶⁵⁶ The state of Florida began attaching VHF radio collars to individual cats in 1981 in order to track panther movements (figure 12–16, radio collar used in Florida panther research). The program was expanded to include Everglades National Park in 1987. Because this required that the panthers be tracked by dogs, treed, and temporarily put under anesthesia, the collaring effort was controversial. In January 1983, a female panther died when a tranquilizer dart hit an artery rather than muscle. Protests from Marjory Stoneman Douglas and others led to changes in the capture protocols, but the project continued.⁶⁵⁷ Because the panther is an elusive and largely nocturnal animal, scientists in that period believed radio tracking was the only viable way to learn about the cats' health, habits, and ranges.

As one of the most endangered large mammals in the world (and Florida's state animal since 1982), the panther has inspired a series of conservation measures. The state stopped all hunting of the species in 1958, and the Department of the Interior listed it as endangered in 1967. In July 1976, the FWS established a panther recovery team, which released a recovery plan in 1981. Everglades National Park biologist James Kushlan was part of the recovery team. The Florida legislature in 1983 established the Florida Panther Research and Management Trust Fund and the Florida Panther Technical Advisory Council. The trust fund, which receives revenue from special panther automobile tags, supports research and public outreach, while the advisory council provides expert advice to state agencies. The tag sales in the 2010s provided about \$1.5 million annually for the state's panther program. At the suggestion of Everglades National Park Superintendent Jack Morehead, a Florida Panther Interagency Committee was formed in 1986. Represented on the committee are the NPS, the FWS, the Florida Department of Environmental Protection, and the Florida Game and Freshwater Fish Commission. Under the committee's auspices, a habitat preservation plan was prepared in 1993. The status of the panther was again addressed in the 1999 MSRP for South Florida. To date, the FWS had not declared critical habitat for the panther, evoking fierce criticism and lawsuits from environmental organizations.⁶⁵⁸

⁶⁵⁶ SMR, Sept. 1965; ENP Annual Wildlife Report, Apr. 20, 1967, Apr. 30, 1973; *Multi-Species Recovery Plan*, 4–125. From time to time, the Pipers also gave black bears, crocodiles, and turtles to be released in the park, Gale K. Zimmer, "Animal Release in Everglades National Park," *National Parks Magazine*, August 1966, 22–23.

⁶⁵⁷ Dr. William B. Robertson Jr. and Oron L. Bass, "Research Plan for Ecology and Population Dynamics of the Florida Panther in Everglades National Park," n.d. [1986], EVER 42242, ser. XIII; "Environmentalists: End Tracking of Panthers," *Miami Herald*, Jan. 21, 1983. One of the more harrowing events in park biologist Oron "Sonny" Bass's career was the day that Superintendent Mike Finley insisted that Bass accompany him to Marjory Stoneman Douglas's home to tell her about the park's plans to place radio collars on panthers. Stoneman was 96 at the time. Finley carefully explained the reasons for the program, and Douglas finally said that she understood, "but I just can't go along with you." As they got back in the car, Finley looked at Bass and said, "You kill one of those cats and we're all dead." Bass interview.

⁶⁵⁸ Federal listing, 32 Fed. Reg. 4001; *Multi-Species Recovery Plan*, 4–124, 4–129.



Figure 12–16, radio collar used in Flori

The panther has an important role in the lives of the Miccosukee people. Most medicine men in the tribe come from the tribe’s panther clan. Tribal members believe that panther claws and tails have important medicinal and spiritual properties. Residents of the Miccosukee Reserved Area also have concerns about panther interference with the use of ceremonial locations and the safety of their children and livestock from panther depredations. An incident in the Big Cypress National Preserve highlights some of the sensitive issues regarding the Miccosukee Tribe and panthers. In May 2004, because a 10-month-old male panther was frequenting a tribal ceremonial site, the panther was moved sixty miles north to a state forest. In January 2005, another male killed the relocated panther.⁶⁵⁹

By the early 1990s, the signs of inbreeding in the Florida panther population led scientists to fear that the subspecies was doomed. Many panthers had congenital heart defects, fertility and neonatal survival were poor, and estimates of the total population hovered around thirty. The FWS approved the introduction of female cougars from Texas. Just a few hundred years ago, Texas cougars and Florida panthers constituted a single, interbreeding population. The FWS ruled that any offspring of an introduced female would have endangered species status. Eight female Texas cougars were released in South Florida in 1995, two of them within Everglades National Park. Initial results of this experiment seemed quite promising. Hybrid offspring had healthy hearts and better survival rates, and

⁶⁵⁹ FWS, *Environmental Assessment for the “Interagency Florida Panther Response Plan”* (Naples, FL: FWS, Mar. 2008), 4, 19, 22, <http://www.fws.gov/VeroBeach/MammalsPDFs/R4FWSPantherEAFinal.pdf?spcode=A008>.

most observers have pronounced the cross-breeding a success. An increase in the panther population seems to confirm this; in 2012, the Florida Fish and Wildlife Conservation Commission estimated a population of 100 to 160 adults and subadults. The discovery between 2003 and 2010 of a number of hybrid cats with heart defects, however, has cast some doubt on the ultimate effectiveness of the cross-breeding effort.⁶⁶⁰

From 1978 until 2009, Everglades staff were able to fairly consistently monitor the radio-collared cats from fixed-wing aircraft. Budget constraints since 2009 have forced the park to turn to passive monitoring using remotely triggered cameras. Everglades staff monitors the panther subpopulation east of Shark Slough. The panther subpopulation west of Shark Slough is monitored by Big Cypress National Preserve staff, because that population resides mainly in the preserve but occasionally crosses over into Everglades. Statewide, panther researchers are increasingly using GPS collars that can be monitored without overflights. Methods commonly used to monitor panthers are often time-consuming and stressful to the animals. Each winter, the FFWCC, with assistance from federal agencies, tracks and captures a certain number of collared and uncollared panthers. Animals are examined and weighed, blood and skin samples are taken, and any necessary vaccines and medicines are administered. Panther kittens under six weeks of age are also examined, sampled, and marked with a transponder identification chip. Everglades National Park scientists anticipate the future use of less expensive and intrusive monitoring methods. One such method is the use of biopsy darts, which collect a small skin and tissue sample inside a needle and then drop off the animal. Another promising technique is scat analysis. DNA in scat allows researchers to distinguish individuals, and hormones provide information on nutritional health and reproductive status.⁶⁶¹

The long-term prospects for the panther remain uncertain. Its habitat continues to be reduced and fragmented by development. The automobile is the primary enemy of the panther, because roads divide up its range and panther/automobile collisions kill ten, fifteen, or more animals annually. Educating the public on how to coexist with panthers is an important focus of panther recovery efforts. The panther's survival depends on an unprecedented level of human intervention. The cross-breeding with Texas cougars was one such management intervention, and the construction of costly panther underpasses beneath I-75 (Alligator Alley) and U.S. 1 was another. One focus of current recovery efforts is the establishment of a breeding population north of the Caloosahatchee River. In May 2014, a recently formed Panther Recovery Implementation Team proposed a

⁶⁶⁰ *Multi-Species Recovery Plan*, 4–132; Roman, 117–18; “Panther Back from Near Extinction,” *Miami Herald*, Feb. 3, 2002; “Florida Panther Back from the Brink,” *Miami Herald*, Aug. 22, 2005; *Florida Panthers: Next Steps*, 3.

⁶⁶¹ Mark Parry, personal communication, Oct. 31, 2013; FFWCC, *Annual Report on the Research and Management of Florida Panthers: 2012–2013* (Naples, FL: FFWCC, 2013), 7–10, [http://www.floridapanther.net/images/field_notes/FWC Panther Annual Report 2012 13 Final revised_11sept2013.pdf](http://www.floridapanther.net/images/field_notes/FWC_Panther_Annual_Report_2012_13_Final_revised_11sept2013.pdf).

program to pay landowners a set sum per acre to maintain panther habitat. The panther subpopulation in Everglades National Park east of Shark Slough is small compared to other subpopulations and mixes little with the others. It is an important population, however, and would be especially so if the other populations were ravaged by disease. The FFWCC spends its funds mostly on the larger subpopulations and relatively little in Everglades National Park.⁶⁶²

Manatee

The Florida manatee (*Trichechus manatus latirostris*) is a large, light brown to gray herbivorous marine mammal (figure 12–17, manatee). It and its closely related subspecies, the Antillean manatee (*Trichechus manatus manatus*) belong to the mammalian order Sirenia. The animal is found in shallow coastal Florida waters from the Georgia border clear around to the Suwannee River on the Gulf Coast. After 1947, Everglades staff were able to regularly observe manatees, mostly in and around Whitewater Bay and the Shark, Broad, and Rogers Rivers. Everglades National Park biologist Joseph Moore published an important article on the manatee in 1951 and developed the now-standard practice of identifying individuals by the pattern of propeller scars on their backs. Manatees have no predators besides humans. Other than stress from cold water, the major threat to manatees is the careless operation of motorboats. In a study of 520 manatee carcasses found in park waters between 1974 and 2004, a cause of death could be determined in 286 cases. Of these, 115 (40 percent) were found to have died from boat collisions. Because manatees move around often in search of food, it is extremely difficult to arrive at accurate population counts. The best estimate of the current minimum total population is 3,300.⁶⁶³

⁶⁶² Craig Pittman, “Florida’s Best-Managed Extinction,” *St. Petersburg Times*, Apr. 18, 2010; Roman, 130, 137; FFWCC, *Florida Panthers, Next Steps*, 14, 20–24; Mark Parry, personal communication, Oct. 31, 2013; Craig Pittman, “Federal Proposal Would Pay Landowners to Preserve Florida Panther Habitat,” *Tampa Bay Times*, May 22, 2014.

⁶⁶³ Roger L. Reep and Robert K. Bonde, *The Florida Manatee: Biology and Conservation* (Gainesville: University Press of Florida, 2006), xv; Joseph C. Moore, “The Status of the Manatee in Everglades National Park, with Notes on its Natural History,” *Journal of Mammalogy* 32, no. 1 (Feb. 1951): 22–36; “Everglades National Park: Boats Hurting, Killing Manatees,” *Miami Herald*, Nov. 13, 2007.



Figure 12–17, manatee

An 1893 Florida law made it illegal to kill or capture manatees, but enforcement was lax, and animals continued to be taken, especially when other sources of food were short. Protection of the manatee improved in the 1970s, with the passage of the Marine Mammal Protection Act (1972) and Florida’s Manatee Sanctuary Act (1978). The Florida law imposed speed limits on motorboats in waters frequented by manatees. The FWS placed the manatee on the list of endangered species on March 11, 1967, under the 1966 act. The FWS designated critical habitat for the Florida manatee effective September 24, 1976. It then produced a recovery plan in 1989, which has been revised twice, most recently in 2001. The plan’s goal “is to assure the long-term viability of the Florida manatee in the wild, allowing initially for reclassification to threatened status and, ultimately, removal from the List of Endangered and Threatened Wildlife.”⁶⁶⁴

As the FWS stated in its latest five-year review of the species, “recovery efforts for the Florida manatee are highly complex, given the tremendous amount of controversy and conflict associated with ensuring the persistence of this species.” Recreational interests in Florida have from time to time argued that manatee populations are stable and protective measures too limiting. In December 2007, hearings convened by the Florida Fish and Wildlife Conservation Commission to discuss a change to state endangered status proved quite contentious. Everglades staff monitors manatee populations in park waters and works closely with state and federal agencies on long-term recovery efforts. The main protective strategy employed by the park is enforcement of manatee zone speed limits and other boating regulations.⁶⁶⁵

⁶⁶⁴ 32 Fed. Reg. 4001 (March 11, 1967); 41 Fed. Reg. 41914 (Sept. 24, 1976); FWS, *West Indian Manatee (Trichechus manatus) 5-Year Review: Summary and Evaluation* (Jacksonville: FWS, 2007).

⁶⁶⁵ FWS, *Florida Manatee Recovery Plan*, 3d rev. (Atlanta: FWS, 2001), <http://www.fws.gov/northflorida/Manatee/Documents/Recovery%20Plan/MRP-start.pdf>; Craig Pittman,

Flora

In addition to the royal palm, mentioned by Dan Beard in his 1938 *Wildlife Reconnaissance*, ferns and epiphytes (air plants), especially orchids, were the flora that park managers were most concerned about preserving in the 1950s and 1960s (figure 12–18, an air plant). For years prior to the park’s establishment, some gardeners and collectors had treated the area as a public nursery, removing attractive plants as they pleased. In fall 1950, for example, rangers caught six teenage boys in the act of removing air plants and orchids.⁶⁶⁶ Dr. Frank C. Craighead Sr., a noted authority on Everglades flora and a park collaborator, wrote two books on South Florida orchids, epiphytes, and trees between 1960 and 1971.⁶⁶⁷ In the 1960s, Craighead was a bit frustrated with park managers, believing that at times they failed to adequately protect rare flora in creating trails and fire roads and mowing along motor roads. In 1979, Lloyd Loope and George Avery prepared a report on rare plant species in and near Everglades National Park. The authors assigned a level of concern, an appropriate management action, and a level of monitoring for each species that they listed.⁶⁶⁸ The FWS has listed two plants found in the park, one as endangered and another as threatened.

Crenulate Lead-Plant

The crenulate lead-plant (*Amorpha crenulata*) is a shrub that grows to a maximum height of about five feet and is found only on pine uplands in South Florida. As most of these areas were developed in the twentieth century, the plant began to be found in fewer places. The FWS listed the plant as endangered on July 18, 1985. A recovery plan was approved October 7, 1988, and a revised recovery plan was included in the MSRP, approved May 18, 1999. No critical habitat has been designated for the crenulate lead-plant. In 2007, the FWS could locate only seven populations of the plant. Four of these were naturally occurring and three were reintroductions of the plant on protected sites. The crenulate lead-plant is now entirely dependent on intensive management actions for its continued survival.⁶⁶⁹

Manatee Insanity: Inside the War over Florida’s Most Famous Endangered Species (Gainesville: University Press of Florida, 2010).

⁶⁶⁶ SMR, Nov. 1950.

⁶⁶⁷ The books were *Orchids and Other Air Plants of Everglades National Park* (Coral Gables, FL: University of Miami Press, 1963) and *The Trees of South Florida* (Coral Gables, FL: University of Miami Press, 1971).

⁶⁶⁸ F. C. Craighead to Chief Ranger, ENP, Nov. 10, 1966, EVER 42242; Lloyd L. Loope and George N. Avery, *A Preliminary Report on Rare Plant Species in the Flora of Everglades National Park* (Homestead, FL: SFRC, 1979).

⁶⁶⁹ “Endangered and Threatened Status for Five Pine Rockland Plants,” 50 Fed. Reg. 29345–29349 (July 18, 1985); FWS, *Crenulate Lead-Plant, 5-Year Review: Summary and Evaluation* (Vero Beach, FL: FWS, 2007).

Garber's Spurge

Garber's spurge (*Chamaesyce garberi*) is a hairy perennial herb with wiry, erect stems up to twelve inches long. The plant was once found growing in upland areas and beach ridges in a variety of locations in Dade, Collier, and Monroe Counties. It is fire dependent. Urbanization has eliminated it from the Atlantic Coastal Ridge and all areas of Collier County. Garber's spurge currently has about 17 known populations, two of the largest of which are in Everglades National Park, at northwest Cape Sable and Long Pine Key. Garber's spurge was listed as threatened under the ESA on July 18, 1985. A recovery plan was approved October 7, 1988, and a revised recovery plan was included in the MSRP, approved May 18, 1999.⁶⁷⁰



Figure 12-18, an air plant

⁶⁷⁰ FWS, *Garber's Spurge, 5-Year Review: Summary and Evaluation* (Vero Beach, FL: FWS, 2007).



Wilderness on the Edge:
A History of Everglades National Park

Chapter 13:
Marine Fisheries, Fisheries Management, and Florida Bay

Chapter 13: Marine Fisheries, Fisheries Management, and Florida Bay

South Florida waters have been attractive to fishermen for millennia. Some market fishing by boats from Cuba began in the eighteenth century. Commercial fishing became more viable after 1900 when sources of ice for preserving the catch became more reliable. Well-heeled sportfishermen, mostly from the North, began taking trips to the Everglades region in the 1870s, frequently hiring locals as guides. By the time Everglades National Park was authorized in 1934, both sport and commercial fishing were well established in Florida Bay and along the Gulf Coast. The dividing line between sport and commercial fishermen was not always sharp. Many individual fishermen and the captains who guided them were in the habit of selling excess fish to fish house operators. Although they would surely represent themselves as sportsmen, when they sold part of their catch, these individuals were entering the commercial market. Operations by commercial fishermen in park waters proved to be one of the most contentious issues in Everglades National Park's history. During the campaign for the park's authorization, NPS officials came to understand that Monroe County interests would adamantly oppose the park unless given adequate assurances that commercial fishing could continue. The service provided public assurances to commercial fishermen while internally acknowledging that restrictions on fishing would very likely be necessary in the future. To further natural resource management goals, park managers gradually established limitations, culminating in a total ban on commercial fishing and bag limits for sportfishermen, which became effective January 1, 1986.⁶⁷¹

Early NPS Assurances to Fishermen

Park Service officials in the 1930s were quick to assure South Floridians that sportfishing was a long-accepted recreational pastime in national parks and would be permitted in the proposed Everglades National Park. Sportfishermen mostly sought tarpon, snook, spotted sea trout, gray snapper (also known as mangrove snapper), red drum (also known as redfish or channel bass), and grouper. Commercial fishing was a sizable local business, supporting hundreds of local families. Fish houses processed fish caught in waters slated to become part of the park at Naples, Everglades City, Flamingo, and various places in the keys. Mullet, seatrout, pompano, and mackerel were the most important commercial species. In addition to fin fishes, crabs, spiny lobsters, clams, and sponges were commercially harvested in the area.

Commercial fishermen and their political representatives in Monroe and Collier Counties kept asking for reassurance from the NPS and the Everglades National Park Commission that they could continue to operate in the waters of the proposed park. Mrs. C. S.

⁶⁷¹ Paige, 83–94.

“Mamie” Smallwood of Chokoloskee in August 1936 presented the commission with a petition from Gulf Coast families asking that commercial fishing continue because the fish trade was the “only maintenance” for hundreds of families. Fishermen in Monroe County believed that Ernest Coe and the Everglades National Park Commission had wholly ignored their interests and livelihoods.⁶⁷² Backing up the fishermen, the Monroe County Commission passed a resolution vowing to oppose the inclusion of any portion of Florida Bay or the keys in the proposed park. Director Cammerer and other NPS officials wrote a series of letters to Florida politicians and fishermen’s groups to keep the park project alive. A letter from Cammerer in April 1937 to the Monroe County Fishermen’s Association would be cited locally for decades as an ironclad promise on the part of the NPS. It included the following language:

The National Park Service has no intention of imposing regulations relating to commercial and sports fishing within the Everglades National Park area, other than those contained in Florida State laws, or county laws in the event the latter exist.⁶⁷³

These assurances ultimately persuaded Monroe County to acquiesce in the inclusion of most of Florida Bay within the park. During the final negotiations that led to the state’s commitment of \$2 million dollars for land acquisition in 1947, the NPS repeated its promises to assure the law’s passage. Director Drury wired Bernie Papy, who represented Monroe County in the state legislature, that “commercial fishing will not be prohibited in the proposed park.”⁶⁷⁴

NPS policy in the 1930s and 1940s was to manage fish resources on a sustained yield basis. This meant that restrictions on the taking of a given fish species would be imposed if managers judged that stocks threatened to fall below a level that would allow the species to thrive. Agency officials occasionally referred to this policy when reassuring commercial fishing interests, but did not emphasize it. Internally, NPS managers acknowledged that fish stocks were already under pressure in park waters and that future restrictions might well be needed. Director Cammerer in 1936 wrote Ernest Coe that “the taking of commercial marine species will be regulated only when it appears that the supply is threatened with depletion, and then only to the extent necessary to conserve the supply.” Dan Beard in his 1938 *Wildlife Reconnaissance* noted that “continued commercial fishing is reducing the supply and quality of the catch,” and gave his opinion that some sort of regulation would prove necessary.⁶⁷⁵

⁶⁷² Mrs. C. S. Smallwood to E. F. Coe, ENPC, Aug. 19, 1935, CP, EVER 20995c; Chester Thompson, Monroe County Fishermen’s Assn., to E. F. Coe, ENPC, Apr. 19, 1937, CP, EVER 22687.

⁶⁷³ Dir. Cammerer to Chester Thompson, Apr. 23, 1937, EVER 42242, ser. IV.

⁶⁷⁴ Dir. Drury to Bernie Papy, Apr. 11, 1947, NARA II, RG 79, NPS CCF, box 907.

⁶⁷⁵ Dir. Cammerer to Ernest F. Coe, June 9, 1936, CP, EVER 20406; Beard, *Wildlife Reconnaissance*, 53–56.

At park establishment in 1947, some state regulations on fishing existed, but they were rarely enforced in the park area. “Stop netting” was banned by state law but still widely practiced. This method involved stringing nets up to a mile wide across the mouths of bays and other inlets at high tide. When the tide went out, fish were trapped in the net. Fishermen harvested the commercial species, mostly mullet and spotted sea trout, and left the rest to die. Widely employed legal methods of taking fish for the market included gill nets and line fishing. During World War II, fishermen based outside the immediate area began to use seine nets in Florida Bay, and some locals adopted them. As much as three or four miles wide, these nets had a smaller mesh than gill nets. Small fish that would pass through mesh of a gill net and larger fish that could break through a gill net were caught in a seine net. The seine nets were dragged across the water, using floats at the top and weights at the bottom. The weights did considerable damage to the seabed. Dan Beard as refuge manager in 1946 wrote “commercial fishermen have just about ruined Florida Bay both by abiding by State law and by not doing so. . . . I do not think that the area will be able to stand the fishing pressure that will be exerted on it without considerable regulation.” Once Florida Bay became part of the park in February 1950, the NPS took the first steps to stop the most destructive aspects of commercial fishing.⁶⁷⁶

Fishing Regulations Following Establishment

Superintendent Beard had informal discussions with sport and commercial fishermen, and drew up a set of fishing regulations. Following publication of the proposed rules in the *Federal Register*, the service held a public hearing on them in Homestead in November 1950. Minor changes to the rules on crab traps and bait traps were made, and the revised regulations became effective March 9, 1951, upon their second publication. The regulations banned nets and seines from rivers, bays, and other “inland” waters within the park. Drag seine nets were completely banned, but commercial fishermen were allowed to continue using any other nets approved under state law as well as hook and line in the open waters of Florida Bay and the Gulf of Mexico. Other provisions defined the maximum size of legal nets and crab traps, prohibited the taking of turtles and their eggs, and closed the Ingraham Highway within the park to the hauling of commercial catches of any kind. Those taking shrimp and selling it for bait had to apply for a permit from the park. Local guide fishermen and sportsmen’s clubs strongly supported the regulations as did conservation groups, such as Florida Audubon. Superintendent Beard later noted that these first regulations met with little opposition.⁶⁷⁷

⁶⁷⁶ Daniel Beard to C. R. Vinten, June 6, 1946, NARA Ph, RG 79, 79–58A-360.

⁶⁷⁷ “Notice of Hearing,” 15 Fed. Reg. 7272–7273 (Oct. 28, 1950); 16 Fed. Reg. 2187–2188; Everglades National Park Fishing Regulations, Feb. 15, 1951, NARA Ph, RG 79, 79–67-A-1022; “Fishing Rule Changes for Glades Aired,” *Miami Herald*, Nov. 17, 1950; Daniel B. Beard, “Return of the Gill Net to Florida Bay,” *National Parks Magazine* 26, no. 110 (July–Sept. 1952): 110–11.

Everglades superintendents made minor changes to the fishing regulations between 1951 and late 1964. Park permits had been required for stone crab traps and silver mullet nets since 1948 (figure 13–1, a stone crab catch, 1965). As of January 1956, commercial shrimping permits were restricted to those who held them before that date. In 1958, the park amended the fishing regulations by applying them to the land acquired in the northwest extension of the park boundary. In 1960, commercial shrimping was prohibited in park waters.⁶⁷⁸



Figure 13–1, a stone crab catch, 1965

The state of the fish stocks in the park continued to be a major concern of park managers throughout the 1950s and early 1960s. It was becoming clear that the pressure of commercial and sportfishing was not the only factor in the apparent decline of some species in Florida Bay. There was a growing belief among scientists that the Central & Southern Florida Project had caused less freshwater to flow into the bay. A resulting increase in the bay's salinity seemed to be changing its ecology and affecting fish habitat. To get more data to inform future management decisions, the park in 1958 contracted with the Marine Laboratory of the University of Miami for a catch-and-effort survey. Led by Professor James B. Higman, university students surveyed fishermen at Flamingo. Fishermen were asked how long they were out, where they fished, what species they sought, and how many of each species they caught. As many as 3,000 sportfishermen per

⁶⁷⁸ Acting Supt., ENP, to RDSE, Jan. 7, 1965, EVER 42242, ser. IV; Chronology of Special Regulations for Fishing and Boating in Everglades National Park, ca. 1986, EVER 42242, ser. VI, sub. A, sub. 2.

year were interviewed between 1958 and 1967.⁶⁷⁹ Up to 1965, the park did not collect catch data from commercial fishermen in park waters. In May 1959, the service said that it hoped to be able to expand its research to include study of the ecology of Florida Bay and the life cycles of important game fish species, once funding could be found.⁶⁸⁰

By late 1964, park managers had decided to require permits from all commercial and guide fishermen operating in the park and to possibly make other changes to fishing regulations (figure 13–2, commercial fishing permit). Park staff had informal discussions with fishermen on the Gulf Coast and the keys in November and December 1964. The meetings seem to have focused mainly on the proposed permit requirements. New regulations for fishing in Everglades National Park were then published in the *Register* on May 27, 1965. The agency received no comments or objections, and the regulations were published as a final rule on August 18, 1965, with an effective date of September 17. The regulations added new restrictions on the size and type of nets allowed, closed additional areas on the north shore of Florida Bay to commercial fishing, restricted the use of crab traps to the waters of southern Florida Bay, and reduced from 400 to 200 the number of crab traps a single operator could maintain. They also banned commercial harvest of spiny lobsters while allowing recreational harvesting by hand or bully net during the state’s season. When park rangers attempted to enforce the new rules, however, there were loud objections to them and the way they had been adopted. Superintendent Stanley Joseph met with fishermen in Everglades City in November, but he failed to quell the opposition. On January 14, 1966, Joseph issued an administrative order suspending the enforcement of most of the new rules. Two weeks later, Joseph was replaced after just twenty-eight months as superintendent by Roger Allin. This seems to have been a hastily arrived at decision designed to extricate Joseph from the controversy surrounding the fishing regulations. Evidence for this can be found in the fact that former superintendent Dan Beard came from the Southwest Regional Office in February to spend a week with the new superintendent to bring him up to speed on Everglades issues.⁶⁸¹

Although the new provisions opposed by the commercial fishermen were suspended, the park maintained the requirement that commercial and guide fishermen obtain no-fee permits from the park. A condition of the permits was that the fishermen report their catches on a form supplied by the park. Park managers hoped that the data collected

⁶⁷⁹ A 1979 report indicates that the interviews were conducted “for ten years, from 1958 to 1969.” Ten years of interviewing, beginning in 1958, would end in 1967, not 1969. The park’s computerized database, into which all of the paper reports on Florida Bay fisheries have been entered, supports the 1967 date.

⁶⁸⁰ Gary E. Davis and Edith B. Thue, “Fishery Data Management Handbook, Everglades National Park,” June 1979, <http://www.nps.gov/ever/naturescience/upload/SecureTRT-546.pdf>; SOI to Congressman Dante Fascell (draft), May 6, 1959, NARA II, RG 79, AF, box 2344.

⁶⁸¹ Supt. to RDSE, Jan. 7, 1965, EVER 42242, SER. IV; Gary E. Davis, “Fishery Management Conflicts in Everglades National Park, n.d., EVER 42242, ser. VI, sub. A, sub. 2; SMR, Oct., Nov. 1965, Jan. 1966.

would help them formulate future fishery management decisions. Considerably later, in 1996, the park imposed a \$250 fee for guide fishermen permits (see Chapter 21). In 1972, the park initiated an expanded program of catch-and-effort surveys of sportfishermen. Interviews were conducted at Everglades City, Chokoloskee, and Key Largo as well as Flamingo, and some 12,000 per year were conducted.⁶⁸² It is very uncertain how much useful data the park ever got from any of these surveys. The reports from the commercial fishermen were voluntary. The park biologist in late 1971 observed that most commercial fishermen never submitted any reports, while a few complied rigorously. The interviews with sportfishermen reached perhaps 10 percent or less of all those fishing in the park. Given that the skill level of recreational fishermen varied widely, the reliability of these surveys is questionable.⁶⁸³



Figure 13–2, commercial fishing permit

Having the official fishing rules as published in the *Code of Federal Regulations* differ from the rules actually enforced was clearly not something that the NPS could tolerate indefinitely. Nonetheless, this was a complicated situation involving political, social, economic, and biological aspects. The service continued to feel bound by the commitments previously made to commercial fishing interests, but the complaints from sportfishermen were growing. After considerable discussion with fishermen, state agencies, and the National Marine Fisheries Service, the park published a new set of

⁶⁸² The figure of 12,000 interviews appears in Gary E. Davis, “Estuarine and Coastal Marine Fishery Management in Everglades National Park,” *Proceedings of the First National Conference on Science in the National Parks*, ed. Robert M. Linn (Washington, DC: NPS, 1979), 657–64. Park staff conducting the fishery program in the park in 2013 doubted that the number was that high. The discrepancy may in part hinge on whether the count measures fishing parties or individual fishermen, given that two or three fishermen often go out in a single boat.

⁶⁸³ Marine Biologist, ENP, to Resource Management Staff, Oct. 12, 1972, EVER 22970; Davis, “Fishery Management Conflicts.”

regulations on May 8, 1971, revising some and leaving some unchanged. This time around, the service made sure to include in the announcement that public hearings would be held. After holding hearings in Homestead in December 1972 and analyzing written comments, the NPS published the final rules in July 1973. In the main, the new rules aimed to bring the official code in line with actual practice. The major changes from the rules published in 1965 were an enlargement of the area open to commercial fishing, a relaxation of the rules on gill and trammel nets, an extension from five to fourteen days of the period nets and traps could be left unattended, and a return to the limit of 400 on crab traps. The NPS rejected suggestions made during the comment period for a commercial spiny lobster season and for a lengthening of the stone crab season. The service also rejected requests that commercial fishing be banned entirely “as being inconsistent with prior commitments by the Federal Government.” A suggestion that the park expand its scientific investigations of park fisheries was accepted, subject to available funding.⁶⁸⁴

Mounting Concerns over Fish Stocks

The park continued its expanded catch-and-effort study mentioned above and began investigations of the salinity, bottom types, currents, and patterns of fish predation in Florida Bay. Not many years after the promulgation of the 1973 fishing regulations, sportfishermen and fishing guides, deeply concerned over declining catches, stepped up pressure on the park to take additional action to protect fish stocks. Captain Hank Brown of the Islamorada Fishing Guides Association was a leader in this effort. Fishing guides had suggested bag limits on some game fish as early as 1951, but their concerns had become more critical by the mid-1970s, and were shared by prominent national conservationists, such as Frank Masland (figure 13–3, automated fish scaler at Flamingo dock). John Good, Everglades superintendent from October 1976 to February 1980, heard from the guide fishermen within two months of assuming his position. When asked about what could be done, Good advised the fishermen to get up a petition campaign. The fishermen took the advice, going so far as stopping motorists on U.S. 1 to get signatures; they also formed the Everglades Protection Association in February 1978. Shortly thereafter, the association presented the NPS with petitions carrying 4,700 signatures that asked for a moratorium on the use of nets in the bay, as well as bag limits on red drum and spotted sea trout.⁶⁸⁵ In November 1978, the issue reached a national audience through an article in *Sports Illustrated* provocatively titled “Where Have All the Fishes Gone?”

⁶⁸⁴ Asst. Sec. for Fish, Wildlife and Parks to Sen. Lawton Chiles, Nov. 2, 1972, NARA II, RG 48, Office of SOI, CCF, box 180; 36 Fed. Reg. 8586–8587 (May 8, 1971); “New Fishing Rules Become Law in Park,” July 19, 1973, *South Dade News Leader*; 38 Fed. Reg. 16778–16780 (July 26, 1973).

⁶⁸⁵ In John Good’s recollection, the petitions were sent to Starker Leopold, science advisor to the NPS. Good received a call from Leopold, who said, “I’ve got these three scrolls. What the hell are you doing down there? I detect your fine hand in this.” John Good, interview by author, Sept. 6, 2012.

The article's subtitle framed the issue starkly, "Once fertile, the shallow waters of Florida Bay are now nearly barren of game fish, which have been driven away by high salinity or throttled in commercial gill nets." The park responded by promising to do an assessment of park aquatic resources and putting a moratorium on the issuance of new commercial fishing permits.⁶⁸⁶



Figure 13-3, automated fish scaler at Flamingo dock

This new assessment was complicated by a number of factors, notably the previous promises to the commercial fishermen. In addition, commercial fishermen and sportfishermen largely sought different species. The only species pursued by both were spotted sea trout and pompano. Sportfishermen argued that commercial fishing harmed them in two ways: commercial nets snared and killed juvenile sportfish species, and the mullet removed by the market fishermen deprived sportfish of prey. The commercial fishermen also interfered with traditional patterns of guide fishing. At the start of a day, guide fishermen would net a few mullet to use as bait. The nets of the commercial fishermen stirred up the bottom, clouding the water and dispersing schools, making it impossible for guides to locate mullet. The park, however, lacked data indicating that commercial fishing had a more direct impact on sportfishing. Many scientists blamed the decline in sport catches on the sizable increase in recreational fishing, the increase in Florida Bay's salinity, or other environmental factors. The commercial fishermen and the Florida Division of Marine Resources did not hesitate to cite the park's own scientists,

⁶⁸⁶ 1974 Research Accomplishments and Activities, Feb. 20, 1975, EVER 22965; Dir. Demaray to Miles Collier, July 26, 1951, WNRC, NPS, 79-85-8; Frank Masland Jr. to Dir. Hartzog, Mar. 9, 1972, WNRC, NPS, 79-85-8, box 10; Frederick F. Ruoff, Islamorada Fishing Guides Association, to Supt. Good, Feb. 6, 1978, EVER 38306; John Good, interview by author, Sept. 6, 2012.

who concluded that declining catches “were related to changes in environmental conditions” not commercial fishing.⁶⁸⁷

The park released its *Assessment of Fishery Management Options in Everglades National Park, Florida* in January 1979. The options were then presented and discussed at four public forums, which drew more than 600 participants. The options involved prohibiting net fishing in all or portions of the park’s marine waters, limiting the number of commercial fishing permits, establishing bag limits on red drum, seatrout, and grey snapper, prohibiting the harvest of spiny lobsters, and prohibiting or limiting the harvest of stone crabs. At the hearings, it became apparent that all parties believed that the decrease in freshwater run-off to Florida Bay from the Everglades was the biggest factor in declining fish populations. Neither the park nor the fishermen had any control over that factor. There was considerable disagreement over what management measures that were within the park’s purview would be appropriate. The commercial fishermen vehemently opposed limitations on their activities and accused the NPS of going back on its word. They threatened to sue if they believed the new regulations violated their rights. Sportfishermen were largely in favor of bag limits; many guides had already adopted self-imposed limits. While the great majority of sportfishermen favored a ban on all net fishing, they voiced few, if any, objections to the continuation of commercial hook and line fishing, commercial stone crabbing, and private lobstering in the park.⁶⁸⁸

After reviewing and analyzing the public comments, the park in April 1979 prepared a “Review of Fishery Management Options at Everglades National Park, Florida.” By this point, the NPS was moving toward a position of banning commercial fishing in the park on the grounds that for-profit extractive activities were fundamentally inconsistent with national park purposes. The service was in a difficult position. It had no scientific studies indicating that commercial fishing was responsible for the poor results experienced by sportfishermen, but the latter were increasingly vociferous in demanding an end to net fishing. Superintendent Good and his staff viewed the issue as a competition for the natural resources in Florida Bay and believed that wildlife and sportfishermen had the higher claims. Good observed: “because commercial exploitation of park resources is not a primary objective [of the NPS], we are not as concerned about commercial fishing as we are about preservation of the natural system and the recreational opportunities the system affords.” In part, the park realized that a complete ban would be far easier to enforce than banning netting in some parts of the park but allowing it in others. Park managers also understood that if they continued to allow commercial fishing in any form,

⁶⁸⁷ Edwin A. Joyce Jr., Dir., Division of Marine Resources, to Supt. Good, Feb. 27, 1979, citing Gary E. Davis, “Changes in the Everglades National Park Red Drum and Spotted Seatrout Fisheries, 1958–1978.”

⁶⁸⁸ SFRC, “An Assessment of Fishery Management Options in Everglades National Park, Florida” (Homestead, FL: SFRC, Jan. 1979); Supt. Good to RDSE, Mar. 5, 1979, EVER 38306; “Some Oil for Troubled Waters in Everglades National Park,” *Florida Sportsman*, Apr. 1979.

the controversy would be prolonged indefinitely. Park managers pointed out that promises by former directors were not legally binding and that the NPS could not be expected to abide by promises made under conditions that no longer prevailed.⁶⁸⁹

The NPS published the proposed regulations and an explanation of how they had been developed in the *Federal Register* in September 1979. The major changes were:

1. the complete elimination of commercial fishing, including crabbing, in park waters by December 31, 1985;
2. a bag limit of twenty fish per person, with no more than ten of a single species;
3. a complete ban on taking spiny lobsters;
4. allowing recreational crabbing with a maximum of five attended traps only; and
5. establishment of a crocodile sanctuary closed to all public entry embracing Little Madeira Bay, Taylor River, East Creek, Mud Creek, Davis Creek and Joe Bay.

The service noted:

These regulations have been designed to provide greater resource protection through regulated use and to provide for increased recreational use and enjoyment of park resources by resolving the competition between commercial and recreational fishermen. . . . Most of the public perceives the park's purpose as providing recreation and natural system preservation and not commercial harvest of resources.

The announcement acknowledged that the \$1.2 million that park commercial fishing contributed to the local economy would be lost. It observed, however, that park recreational fishing contributed \$2.5 million in economic benefits and was steadily increasing. The NPS set a sixty-day comment period and held four public hearings on the proposed regulations in October 1979.⁶⁹⁰

As might have been expected, commercial fishermen adamantly opposed the regulations. They said that no crocodiles and very few game fish were caught in their nets, and pointed out that sportfishing was often better in areas of Florida Bay that were open to netting than in smaller bays that were closed to the commercial fishermen. Commercial fishermen believed it was fundamentally unfair to allow guide fishermen to profit from park fisheries via the fees they charged sportsmen, while denying commercial operators the chance to make a living. A complete commercial ban would hit the community of Everglades City particularly hard. The mayor and city council pointed out that five commercial fish houses operated there and fully 277 of the one thousand residents of Everglades City and Chokoloskee were employed in the production and processing of

⁶⁸⁹ Supt. Good to Edwin A. Joyce Jr., Florida DNR, Mar. 26, 1979, Supt. Good to RDSE, Jan. 15, 1980, EVER 38306; John Good, interview by author, Sept. 6, 2012.

⁶⁹⁰ 44 Fed. Reg. 33541–33545 (Sept. 14, 1979).

seafood. Some market fishermen saw the forthcoming ban as evidence of a consistent NPS bias against them, pointing to the early 1950s eviction of the fishing community at Flamingo. The Collier County Commission and the Florida Division of Marine Resources supported the commercial fishermen in their efforts to keep using park waters. The Organized Fishermen of Florida (OFF), representing some 16,000 commercial fishermen across the state, continued to threaten legal action if the ban went into effect. The commercial fishermen tried to enlist Congressman Dante Fascell in their cause; he listened patiently to their pleas, but he did not get involved.⁶⁹¹

In favor of the regulations were the U.S. Fish and Wildlife Service (FWS) and many environmental organizations, including the National Audubon Society and several Florida affiliates, the Izaak Walton League of America, and the Wilderness Society. Some of these groups and the Everglades Protection Association felt the regulations did not go far enough, believing that the ban on commercial fishing should be immediately effective. Other sportfishermen were unhappy with the restrictions on crabbing and lobstering and the closing of the areas in northeast Florida Bay that formed the crocodile sanctuary.⁶⁹²

The final regulations, published on February 15, 1980, with an effective date of March 17, 1980, differed little from the first version. In all, the NPS heard from 2,800 individuals who opposed the phase-out of commercial fishing, against 400 who supported it. The number of those opposed should be viewed with caution, however, because the vast majority had merely signed petitions circulated by the commercial fishermen. The service held to its decision on the phase-out, noting that it was a “definitive solution” to the competition between recreational and commercial fisherman and that the six-year delay in implementation would allow commercial operators to amortize their equipment and find new fishing grounds. Superintendent Good also noted that many conservation and recreational interests wanted a quicker phase-out and would not accept any weakening of the regulations without a fight. Starting in 1980 and continuing through the end of 1985, only commercial fishermen who had held park permits in 1980 were allowed new permits. The park required guide fishermen to get permits, which were open to anyone.⁶⁹³

⁶⁹¹ Lawrence Marvin, “Truth About Fishing in the Park,” *South Dade News Leader*, Nov. 1979; Mayor and Council of Everglades City to Supt. Good, Oct. 29, 1979, EVER 38306; “Everglades Conflict Heating Up,” *Miami Herald*, Oct. 1, 1979; “County Supports Everglades City,” *Organized Fishermen of Florida Newsletter*, Mar. 30, 1979; Edwin A. Joyce Jr., Dir., Florida DNR, to Supt. Good, Mar. 30, 1979, EVER 22965; John Good, interview by author, Sept. 6, 2012.

⁶⁹² Acting RD, FWS, to Acting Supt, ENP, Sept. 19, 1979, EVER 302897; Ron Tipton, National Parks Specialist, TWS, to Supt., ENP, Oct. 11, 1979, TWS papers, ser. 4, box 26; Jack Lorenz, Exec. Dir, Izaak Walton League of America, to ENP, Nov. 13, 1979, IWL papers, box 37; “Chamber Unhappy with Plan,” *Florida Keys Angler*, Dec. 1979.

⁶⁹³ 45 Fed. Reg. 10350–10355 (Feb. 15, 1980); “New Fishing Regs Become Law in Everglades National Park,” NPS press release, Feb. 21, 1980; Supt. Good to RDSE, Jan. 15, 1980, EVER 38306; “New Fishing Regulations Start Monday in Everglades Areas,” *Miami Herald*, Mar. 16, 1980.

As they had threatened, the OFF, representing the commercial fishermen, filed suit in federal court in late March 1980 seeking to block the new regulations. The group attacked the regulations on a number of grounds, including that the park had violated the National Environmental Policy Act by failing to prepare an environmental impact statement as part of its rule making. The OFF's request for a preliminary injunction to suspend enforcement of the regulations was denied in late April, and the case began its progress toward a trial on the merits. With the inauguration of President Ronald Reagan in January 1981 and his appointment of James Watt as secretary of the interior, federal conservation policies changed. Secretary Watt favored increased commercial use of public lands, and he soon began looking for ways to keep commercial fishing going in Everglades National Park, perhaps by granting lifetime permits to those fishermen who had been operating there as of 1979. In April 1981, after meetings in Washington among DOI representatives and representatives of the commercial fishing industry, DOI officials directed the Department of Justice to begin settlement discussions with OFF. The political appointees in Interior told Everglades National Park to hold additional public hearings on the commercial fishing question, which took place in June 1981. They also had the FWS conduct additional research on Florida Bay fish stocks, the funding coming out of the NPS budget.⁶⁹⁴

Both sides in the OFF lawsuit agreed to put it on hold while NPS took another look at the issues. John Morehead, who became Everglades superintendent in May 1980, reported that in the new round of hearings and comments “overall public response remained overwhelmingly in favor of eliminating commercial fishing from the Park by 1985.”⁶⁹⁵ He observed that a reversal of the regulations would be strongly opposed by sportfishermen and conservation groups and would reopen a contentious dispute. Morehead recommended that the 1980 regulations remain in force and was backed by the regional director. The new FWS studies confirmed previous work. Secretary Watt in December 1981 directed the NPS to prepare a scoping paper on the fisheries issues and develop a research program on the marine resources of the park. In February 1982, NPS Director Russell E. Dickenson forwarded an issue analysis, research proposal, and other papers to the secretary, and stated that the position of the service was that the regulations should remain in effect. This was not what the administration was looking for, and the DOI fired back that the NPS “did not fulfill the charge” that it had been given. It seems

⁶⁹⁴ *Organized Fishermen of Florida, et al., vs. Andrus, et al.*, Case No. 80-789-VIC-SMA, U.S. District Court, So. District of Florida, Mar. 28, 1980; Denial of Preliminary Injunction, 488 F. Supp. 1351, Apr. 29, 1981; J. R. Spradley, Assoc. Solicitor, DOI, to Anthony Liotta, DOJ, Apr. 6, 1981; 6-5-81, “National Park Service to Review Fishing Regulations at Everglades,” *Organized Fishermen of Florida* press release, June 5, 1981, HFC; Gary Hendrix, interview by author, July 13, 2012. Ric Davidge, who was an assistant to Asst. SOI G. Ray Arnett, conducted some of the hearings; Davidge came to Florida convinced that the public would want commercial fishing and was surprised when overwhelming majorities testified against it. John Morehead, interview by author, July 16, 2012.

⁶⁹⁵ This statement indicates that Morehead discounted the signatures collected by the commercial fishermen on petitions and gave more weight to those who appeared at hearings or took the time to write a letter.

clear that what Secretary Watt wanted was for the NPS to come up with a rationale for allowing fishing to continue beyond 1985. The NPS repeated that the decision had never rested on biological grounds but rather on longstanding policy for national parks. At this point, Congressman Fascell wrote Secretary Watt urging him to keep the existing regulations.⁶⁹⁶

Backed by Representative Fascell, Superintendent Morehead and his staff firmly and patiently held the line on the fishing ban. The Department of the Interior abandoned its push for a reversal in August 1982, directing the Department of Justice to resume defending the department in the OFF case. In July 1984, U.S. District Judge Sidney M. Aronovitz granted Interior's motion for summary judgment and dismissed the action. OFF appealed the decision, which was affirmed by the 11th Circuit Court of Appeals in November 1985. OFF then asked the U.S. Supreme Court to hear an appeal, but this was denied in June 1986. By then, commercial fishing operations in the park had ended, on December 31, 1985, as the regulations provided. Everglades City residents were very bitter over the outcome. Their reactions are considered more fully in Chapter 19 (figure 13–4, fishing in the Ten Thousand Islands).⁶⁹⁷



Figure 13–4, fishing in the Ten Thousand Islands

⁶⁹⁶ Supt. Morehead to RDSE, July 28, 1981, EVER 42242, ser. VI, sub. A, bus. 2; Charles Waterman, "Reconsidering Commercial Fishing Policy in Everglades Is Bad News," *Florida Times-Union*, Apr. 28, 1981; Dir., NPS, to Asst. Sec., Mar. 25, 1982; Ray Hubley to Ric Davidge, Apr. 7, 1982, EVER 42242, ser. VI, sub. A, sub. 2; Congressman Dante Fascell to SOI, Apr. 9, 1982, EVER 302897.

⁶⁹⁷ "U.S. to Fight Suit Over Glades Fishing," *Miami Herald*, Aug. 8, 1982; "Commercial Fishing Ban in 'Glades Upheld,'" *Miami Herald*, July 7, 1984; 590 F. Supp 805, Nov. 15, 1985; U.S. Supreme Court denial of certiorari in *Organized Fisherman of Florida vs. Hodel*, 85–1561; John Morehead, interview by author, July 16, 2012.

The Health of Florida Bay

Concerns about the abundance of sportfish and the future of commercial fishing preoccupied park staff from the mid-1970s through the mid-1980s. Soon after commercial fishing ended, broader concerns about the health of Florida Bay came to the fore. Some fishermen claimed to have noticed changes in the clarity of the bay's water in the 1970s, but it was a large algae bloom and a massive die-off of sea grasses in the bay in 1987 that first caused widespread alarm.

Florida Bay, 80 percent of which lies within Everglades National Park, is one of the largest estuarine systems in the world. The bay is a shallow lagoon, with an average depth of less than five feet. It contains a mosaic of microenvironments, with relatively deeper basins (locally known as lakes) separated by mud banks. Deeper-water channels from three to fifteen feet deep connect the basins. The central areas of the bay tend to be isolated from currents and water exchanges that are typical of areas closer to the Gulf of Mexico. The salinity of the bay varies from place to place, from season to season, and from year to year. In the twentieth century, much of the seabed was covered by lush stands of sea grasses. Turtle grass (*Thalassia testudinum*) was the most common variety in the second half of the twentieth century, with shoal grass (*Halodule wrightii*) and manatee grass (*Syringodium filiforme*) also being present. The bay is an important nursery ground for pink shrimp and spiny lobsters, which migrate to other areas as adults. In addition, it provides habitat for sponges, stone crabs, sea turtles, the American crocodile, and a number of important sportfish. Sportfishing is a major driver of the economy of the Florida Keys, making the health of the bay an important issue for the community. Finally, the bay is a significant feeding ground for wading birds, eagles, and osprey.⁶⁹⁸

Periodic fish kills in Florida Bay are a natural occurrence. Elevated temperatures and reduced freshwater run-off can increase salinity and depress dissolved oxygen levels, killing fish by the hundreds or thousands. Large algae blooms tend to exacerbate the kills because the algae draw oxygen from the water at night. Prolonged cold snaps in the winter are deadly to fish, manatees, and crocodiles. No fish kills have been tied to pollutants in the bay, although an unusually large fish die-off in September 1990 aroused some suspicion. Hundreds of thousands of dead fish were spotted in Garfield, Rankin, and Snake Bights. Some outside scientists criticized park staff for not testing any of the

⁶⁹⁸ Florida Bay Program Management Committee, *The Strategic Science Plan for Florida Bay* (N.p.: Nov. 2004), 1; Thomas V. Armentano, Michael B. Robblee, P. Ortner, N. Thompson, David Rudnick, and J. Hunt, *Florida Bay Science Plan* (Homestead, FL: NPS, Apr. 1994), 16–17; Margaret D. Hall, Kenving Madley, Michael J. Durako, Joseph C. Zieman, and Michael B. Robblee, "Florida Bay," in *Seagrass Status and Trends in the Northern Gulf of Mexico: 1940–2002*, Scientific Investigation Report 2006–5287, ed. L. Handley, D. Altsman, and R. DeMay (Washington, DC: USGS, 2006), 242, <http://pubs.usgs.gov/sir/2006/5287/pdf/CoverandContents.pdf>.

dead fish for toxins. The park responded that weather conditions were responsible for the event, so there was no point in conducting tests. In January 2010, the park experienced a two-week-long cold spell, something that had not occurred for decades. The chilly weather caused the largest fish die-off in the memory of many locals and killed at least seventy crocodiles and sixty manatees. Cold weather is also hard on introduced species, and the 2010 event rid the area of an untold number of iguanas and pythons.⁶⁹⁹

The Florida Bay algae blooms and sea grass die-offs continued into the early 1990s; in 1992, a 300-to- 450-square-mile bloom dubbed the dead zone appeared. Both phenomena increased the murkiness—called turbidity by scientists—of the bay’s waters. The algae turned the water green or brown, and when sea grasses died, the dead plant material and the increased stirring up of sediment clouded the waters. Fishermen seeking tarpon, bonefish, and other species often rely on being able to see their prey. The clarity and salinity of the water are also major determinants of what variety of sea grass is able to grow. Turtle grass, for example, is more salt tolerant than shoal grass and has replaced it in some areas in recent decades. The bay’s problems began to attract attention in the press, including a 1995 piece in *Sports Illustrated* by Carl Hiassen. Hiassen wrote that bay waters once reverently described as “gin-clear” had been transformed into “a bilious rank-smelling broth” by algae.⁷⁰⁰

In response to declining conditions in the bay, managers from Everglades National Park and the National Oceanic and Atmospheric Administration’s Looe Key National Marine Sanctuary in 1993 created an informal organization, the Florida Bay Working Group. The working group produced an evaluation of previous scientific studies of the bay and in 1994, a *Florida Bay Science Plan*, the first such interagency plan. The science plan synthesized the existing science plans of several state and federal agencies and set forth objectives for Florida Bay monitoring, research, and modeling. By this time, the Clinton administration had created the South Florida Ecosystem Restoration Task Force (Task Force) to coordinate the policies of the multiple federal agencies that managed land in the region (see Chapter 28). The South Florida Management and Coordination Working Group of the Task Force approved the *Florida Bay Science Plan*. It also gave more formal status to the Florida Bay Working Group, which was renamed the Florida Bay Program Management Committee (PMC).⁷⁰¹

⁶⁹⁹ “Park Officials Criticized for Ignoring Fish Kill,” *Miami Herald*, Oct. 2, 1990; “Thousands of Game Fish Wash Ashore,” *Miami Herald*, Aug. 26, 1993; “Heat Stroke May Have Killed Fish,” *Miami Herald*, July 23, 2009; “Big Chill Kills Crocs, Pythons, Sea Cows,” *Miami Herald*, Feb. 7, 2010.

⁷⁰⁰ “Algae Bloom Threatens Largest Lobster Nursery,” *St. Petersburg Times*, Feb. 18, 1993; Carl Hiassen, “The Last Days of Florida Bay,” *Sports Illustrated*, Sept. 18, 1995, <http://sportsillustrated.cnn.com/vault/article/magazine/MAG1007122/1/index.htm>.

⁷⁰¹ Donald F. Boesch, Neal E. Armstrong, Christopher F. D’Elia, Nancy G. Maynard, Hans W. Paerl, and Susan L. Williams, *Deterioration of the Florida Bay Ecosystem: An Evaluation of the Scientific Evidence*, Sept. 15, 1993, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.22.8350&rep=rep1&type=pdf>; Armentano, et al., *Florida Bay Science Plan*, 5.

In 1997, the Science Oversight Panel of the Florida Bay PMC recognized the need for a revision of the *Florida Bay Science Plan*. This resulted in the *Strategic Plan for the Interagency Florida Bay Science Program*. The 1994 science plan had focused on basic information needs and the development of program processes. The 1997 strategic plan identified five central questions related to ecosystem attributes, set out steps needed to address the questions, and where possible, assigned agency responsibilities. The five central questions focused on the following issues: 1) the effects of storms, changing freshwater flows, sea level rise, and local evaporation/precipitation; 2) nutrient exchange and cycling; 3) algae blooms; 4) changes in sea grass communities; and 5) the recruitment, growth, and survival of Florida Bay animal communities. Not long after the publication of the strategic plan, the PMC decided to expand the program's scope to include adjacent waters: Biscayne Bay and the Gulf and Atlantic waters that are part of the Florida Keys National Marine Sanctuary. The Florida Bay Interagency Science Center maintained by the NPS on Key Largo (described in Chapter 11) became the major field station for scientific work on Florida Bay.⁷⁰²

In 2004, the PMC produced a revised plan, *The Strategic Science Plan for Florida Bay*. A new plan was needed in large part in order to coordinate Florida Bay science activities with the larger goals of the Comprehensive Everglades Restoration Plan (CERP), authorized by Congress in 2000 (see Chapter 28). Because the Restudy of the Central and Southern Florida Flood Control Project undertaken by the U.S. Army Corps of Engineers in the 1990s focused mainly on the Everglades, the Corps also began a Florida Bay and Florida Keys Feasibility Study. This study's goal was to evaluate Florida Bay and its connection to the Everglades, the Gulf of Mexico, and the Florida Keys marine ecosystem and make recommendations concerning projects under the CERP that would alter freshwater deliveries to the bay. Largely because of the expense and complexity of developing models for the functioning of Florida Bay, the Corps' study has not yet been completed. A major goal of the PMC's 2004 strategic science plan was to ensure that results from Florida Bay research and monitoring activities are integrated into ongoing Everglades restoration decisions. As mechanisms for implementing the CERP began to take shape in the 2000s, the Florida Bay PMC ceased meeting. The various subgroups under the working group of the South Florida Ecosystem Restoration Task Force have taken over some of the functions of the PMC. The scientific advisory panel for CERP, known as RECOVER (REstoration, COordination, and VERification) also makes recommendations for Florida Bay research efforts. Many of the measures of the success of CERP projects focus on the "River

⁷⁰² Florida Bay Program Management Committee, 2; David Rudnick, personal communication, June 28, 2013. The Florida Bay Program Management Committee became the Florida Bay and Adjacent Waters Program Management Committee.

of Grass”; the monitoring of conditions in Florida Bay and the development and fine-tuning of metrics related to it are equally important.⁷⁰³

Much of the research done on the Florida Bay ecosystem is conducted from the Florida Bay Interagency Science Center, co-located with the Key Largo ranger station (see Chapter 7). Partners in the operation of the center include the South Florida Water Management District, the National Oceanic and Atmospheric Administration, Florida International University, Florida Atlantic University, and the Florida Fish and Wildlife Conservation Commission.⁷⁰⁴

A great deal more is known today about the ecology of Florida Bay than was known in 1993, but many uncertainties remain. The volume and timing of freshwater flows from the mainland affect the salinity and turbidity of the bay. It is clear that the Central and Southern Florida Flood Control Project and previous drainage efforts reduced the amount of freshwater reaching the bay and altered the timing and sources of freshwater deliveries. The consensus view of scientists is that the bay is more saline now than before drainage. The composition of sea grass communities before drainage is not clearly understood. Because of the bay’s shallowness, it is presumed that extensive sea grass beds have existed for centuries. Before widespread hunting, the grazing of the sea grasses by large populations of turtles and manatees likely made the water more turbid than it typically was in the mid-twentieth century. As agriculture expanded in South Florida in the second half of the twentieth century, freshwater reaching Florida Bay contained more phosphorous and other fertilizer components, which have the potential to promote algae growth in the bay and eventually cause eutrophication. It has also been demonstrated that the fill placed between keys during the construction of the railroad to Key West (1906–1912) reduced the exchange of water between Florida Bay and the Atlantic, which likely limited the outflow of excess biomass from the bay.⁷⁰⁵ The role of hurricanes and tropical storms in flushing excess biomass from the bay is not clearly understood. The scientific consensus is that if freshwater flows to the bay can be augmented by projects undertaken as part of the CERP, water quality will improve and the number and size of algae blooms will diminish.

⁷⁰³ Florida Bay Program Management Committee, 3–6; John Hunt and William Nuttle, eds., *Florida Bay Science Program: A Synthesis of Research on Florida Bay* (Tallahassee: FFWCC, 2007), http://research.myfwc.com/engine/download_redirection_process.asp?file=tr11_2211.pdf&objid=52697&dctype=publication; David Rudnick, personal communication, Aug. 20, 2013; U.S. Army Corps of Engineers, Overview of the Florida Bay and Florida Keys Feasibility Study, http://www.evergladesplan.org/images/fbfk_wunderlich_poster.pdf.

⁷⁰⁴ “New Digs for Everglades Park Science Center,” *Key West Citizen*, Feb. 17, 2010.

⁷⁰⁵ Boesch, et al., 2, 4, 7, 9; David Rudnick, personal communication, August 20, 2013.

An issue that has arisen in recent decades is the damage inflicted on sea grass stands by propeller blades. As motorboats have become more powerful and cheaper, their use in Florida Bay has increased dramatically. Many boaters are unfamiliar with the mosaic of channels, basins, and mudflats in the bay and sometimes end up inadvertently plowing furrows in sea grass stands. This stirs up sediment and chokes some plants; the furrows can take ten years or more to fill in with vegetation (figure 13–5, propeller scarring in Florida Bay). As the park moved forward with the preparation of its GMP in the 2000s, it proposed alternatives that included the establishment of pole/troll zones in Florida Bay to protect shallow areas from propeller scarring. In a pole/troll zone, the use of internal combustion engines is banned; propulsion must be by pole, paddle, or electric trolling motor only. When these alternatives were presented to the public in 2009, some stakeholders suggested establishing a pilot pole/troll zone in a defined area as a test. After studying possible areas and conducting consultations, the park established a 9,400-acre pole/troll zone in Snake Bight, effective January 1, 2011. The condition of the seabed within the pole/troll zone is being monitored and compared with the seabed in nonrestricted areas.⁷⁰⁶



Figure 13–5, propeller scarring in Florida Bay

In 1995, the National Parks Conservation Association (NPCA) produced a resource assessment of Florida Bay. One recommendation of the assessment was that the park would require boaters to take a course on boating safety. Some years later, in 2003, the NPCA received an anonymous \$3.3 million donation to be used over five years to address problems in Florida Bay. Some of the money received by the association was used for research on the number of boaters using the bay and to assess the extent of the damage already done to the seabed. The NPCA formed a coalition of scientists and local users of the bay to recommend how the remaining funds could best be expended. Educating boaters, better marking of channels, and expanded ranger patrols emerged as key recommendations for preventing future damage. Consequently, some of the funds

⁷⁰⁶ Atkins North America, Inc., *Snake Bight Pole and Troll Zone, Everglades National Park, Year 1 Monitoring Report* (Doral, FL: Atkins North America, Aug. 2011), 5–6.

were employed to purchase patrol boats for the park and place new navigational markers. The park also published a brochure that includes a map of the bay and a guide for its responsible use by boaters. The eight-page brochure has an article on the role of sea grasses in the ecology of the bay, detailed guidelines on safety, and instructions on how to pole one's way to deeper water after running aground. The brochure is available at local marinas and online.⁷⁰⁷

As a result of internal park discussions, public input, and the recommendations of the NPCA resource assessment, the preferred alternative in the park's GMP released in early 2013 called for the adoption of a mandatory boater education program, not just for Florida Bay, but for all park waters. All boaters would be required to take a course, geared to the type of boat and duration of usage in the park, and receive a permit. The courses are to be available online, at visitor contact points and local marinas, and in gateway communities. Details of the education and permitting program will be worked out after the GMP is approved. Another aspect of the preferred alternative was the establishment of pole/troll zones aggregating approximately 131,302 acres in the shallowest and most vulnerable areas of Florida Bay. This represents about one-third of the total bay acreage within the park boundary. The NPCA unveiled a precursor to the new direction proposed for boating on the bay in the GMP with the unveiling of its voluntary Eco-Mariner program in April 2009. This involves a free online boater education course in English or Spanish. The Eco-Mariner website also provides summaries of fishing regulations and license requirements and updated information on fishing conditions.⁷⁰⁸

While the mandatory boater education proposal in the GMP gained widespread support in South Florida, the idea of banning the use of internal-combustion motors from about 33 percent of Florida Bay has been controversial. Conservation groups, such as Florida Audubon, support the pole/troll zone while Upper Keys fisherman Sandy Moret branded it "way, way beyond reason." Park management has pointed out that 96 percent of the pole/troll zone is within one mile of a marked channel or deeper water. Fishing guides countered that a mile is a long way to paddle and that the restrictions will make it harder for them to earn a living.⁷⁰⁹

⁷⁰⁷ Brian Lavendal, "Just Skimming the Surface," *National Parks*, Summer 2005, 36–41; NPCA, Florida Bay: A Resource Assessment (Washington, DC: NPCA, Dec. 2005); NPS, Florida Bay Map and Guide, http://www.nps.gov/ever/planyourvisit/upload/map_and_guide_2012_spread.pdf; NPCA, Florida Bay: An Assessment (Washington, DC: NPCA, 2007), <http://www.npca.org/about-us/center-for-park-research/stateoftheparks/florida-bay/FLBAreport.pdf>.

⁷⁰⁸ NPS, *Draft GMP*; NPCA media release, "Eco-Mariner Boater Education Course Premieres at Earth Day Event to Help Boaters Protect Florida Bay," Apr. 22, 2009, http://www.npca.org/news/media-center/press-releases/2009/eco_mariner_042209.html; Eco-Mariner website, <http://ecomariner.org>.

⁷⁰⁹ "Driver Education for Boaters?," *Key West Citizen*, Aug. 21, 2011; "Poll, Troll Zones for Third of Bay," *Key West Citizen*, Mar. 3, 2013.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 14:
Control of Invasive Species and Native Pests

Chapter 14: Control of Invasive Species and Native Pests

Nonnative species, both plants and animals, are a serious concern for managers at Everglades National Park. The warm subtropical climate and changes caused by the Central and Southern Florida Flood Control Project make the area particularly susceptible to invasion by exotic species. In some cases, local residents introduced exotic plants long before the park was authorized. When exotic plants have high reproductive rates, elevated seed production, and longevity, they can easily displace native plants. Park scientists raised a concern over Australian pine within a decade of park establishment. Today, approximately 250 nonnative plant species are known to exist in the park. For many decades, South Florida has supported an exotic pet trade that annually imported or bred thousands of nonnative animals. There have been multiple accidental or deliberate releases of exotic land animals and fish from private owners and pet breeding establishments.⁷¹⁰ Some of these animals have established breeding populations within the park. Park efforts regarding exotics have moved from attempts to control or eradicate them within its boundary to public education efforts aimed at preventing their release outside the park. In addition to attempting to control exotics, the park has had to contend with mosquitoes and other native pests that, unless artificially restrained, can at times make the park unbearable for visitors and staff.

The Pink Bollworm Project

The pink bollworm project, the first known effort to control an exotic species in what became the park, got underway in the early 1930s. The pink bollworm is a larval form of a moth, *Pectinophora gossypiella*, believed to be native to the Indian subcontinent (figure 14–1, pink bollworm). It was first reported as a pest in cultivated cotton in East Africa in 1904 and was found in Mexico in 1916. In 1932, the worm was discovered in experimental cotton plants at the U.S. Department of Agriculture (USDA) station at Chapman Field south of Miami. Investigations soon showed that the worm had found a host in a local variety of wild cotton (*Gossypium hirsutum*), which grows within five miles of the shore on many Florida keys and along the Gulf Coast. Wanting to keep this pest from affecting cotton crops in the Southeast, the USDA began a program of eradication of the wild cotton host plant in South Florida. Under the program, crews went into the field from late September to May to uproot and burn cotton plants. The USDA found Flamingo an ideal

⁷¹⁰ Robert F. Doren and David T. Jones, “Plant Management in Everglades National Park,” in *Strangers in Paradise: Impact and Management of Nonindigenous Species in Florida*, ed. Daniel Simberloff, Don C. Schmitz, and Tom C. Brown (Washington, DC: Island Press, 1997), 275–76; Hillary Cooley, “Exotic Vegetation Management Program: Fiscal Year 2012 Report” (Homestead, FL: NPS, 2012), 2.

spot to set up a seasonal camp for the local black men it hired for this heavy labor. White supervisors of the project apparently commuted from Homestead.⁷¹¹

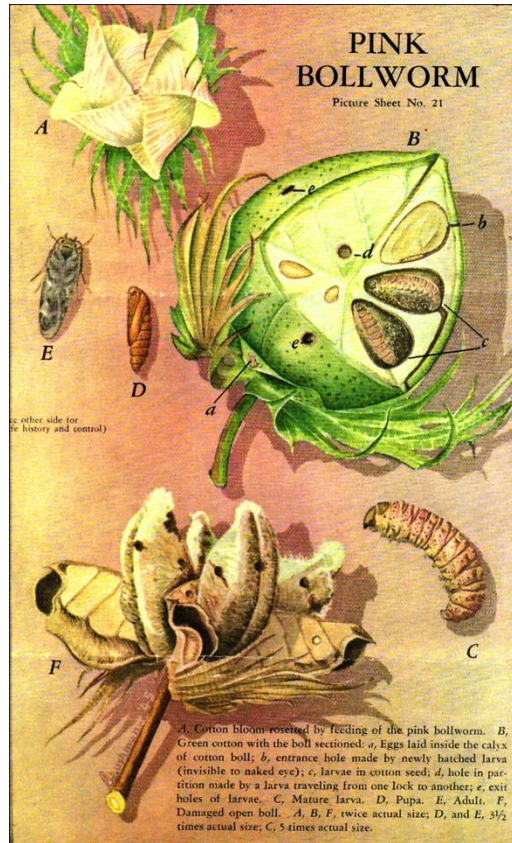


Figure 14–1, pink bollworm

The USDA’s Flamingo camp was set up each year from 1932 through 1947 (figure 14–2, Flamingo camp for wild cotton eradication workers). From Flamingo, work crews went by boat to keys and by truck to mainland areas, which required building temporary roads and trails. Congress declined to fund the project for fiscal years 1948 and 1949 (July 1, 1947, to June 30, 1949). Congress restored funding for fiscal year 1950, and the USDA requested permission from the NPS to resume the project. Superintendent Beard opposed restarting the project. As a wildlife technician and refuge manager, he had observed damage to plants surrounding the cotton as well as the occasional killing of snakes and harvesting of orchids and mahogany timber by project workers. None of this seemed appropriate in a national park. Further, Beard questioned the need for the program, given that the only cotton raised commercially in Florida was about 250 miles to the north and the USDA crews could never keep up with the spread of wild cotton. Beard and others suspected the whole program was more about getting federal dollars into South Florida than protecting crops. Beard consulted

⁷¹¹ Lloyd Noble, *Fifty Years of Research on the Pink Bollworm in the United States*, Agriculture Handbook No. 357 (Washington, DC: USDA, 1969), <http://babel.hathitrust.org/cgi/pt?id=uiug.30112019254223#page/14/mode/1up>.

with Dr. Walter M. Buswell, a botanist at the University of Miami, who observed that Congress could achieve equal benefit to the Florida economy with far less resource damage if it merely put the bollworm workers up in a Miami Beach hotel for a few weeks.⁷¹²

The USDA had enough clout to keep the project going, and the best that Everglades superintendents could do was keep a close watch on the project, prohibit burning of vegetation, and push the USDA to use herbicides rather than machetes in removing the wild cotton. The project went forward under a memorandum of understanding between the Interior and Agriculture from 1949 into the early 1970s. By then, the USDA was admitting that it had failed to eradicate wild cotton in South Florida. Dr. Bill Robertson noted that the “program has come under severe question periodically for more than thirty years.” Additionally, the “incidence and the mobility of the parasite are both very low” and “control efforts are almost necessarily erratic.” He strongly urged the NPS to put an end to the program, which it did in 1972.⁷¹³



Figure 14-2, Flamingo camp for wild cotton eradication workers

⁷¹² Supt. Beard to RDR1, Jan. 21 and Jan. 28, 1949, NARA II, RG 79, NPS CCF, box 924.

⁷¹³ Memorandum of Understanding, Dec. 8, 1949, NARA II, RG 79, NPS CCF, box 924; William B. Robertson Jr., Wild Cotton Eradication Project, Dec. 14, 1971; Acting Dir., NPS, to T. W. Edminister, USDA, Aug. 17, 1972, NARA Ph, RG 79, 79-85-8.

Invasive Flora

By the late 1960s, three nonnative trees had emerged as serious problems for Everglades National Park: Australian pine, melaleuca, and Brazilian pepper. Australian pine (*Casuarina equisetifolia*) was the first nonnative that park managers recognized as a potential threat (figure 14–3, Australian pine). The tree, which is not a pine but an evergreen hardwood, was brought to Florida in the late 1800s and planted as windbreaks and for bank stabilization. It reaches heights of seventy to ninety feet and is a prolific producer of seeds, which are spread by birds, wind, and water. In 1956, Dr. Robertson noted individual trees in the park and urged that they be removed before “we have solid stands to contend with.” Hurricane Donna in 1960 compounded the problem by widely scattering seeds.⁷¹⁴



Figure 14–3, Australian pine

Melaleuca (*Melaleuca quinquenervia*), known variously as paperbark tree, cajeput, and punk tree, is native to Australia (figure 14–4, Melaleuca trees). It was introduced in South Florida around 1900 as an ornamental. University of Miami Forester John C. Gifford and others promoted it as an ideal tree for reclaiming wetlands, believing that it drew water from the ground. Ernest Coe recommended planting it on otherwise “useless” land, and the Corps used it to stabilize the levees around Lake Okeechobee in the late 1930s. The tree is an evergreen, grows up to eighty feet, and has a layered, whitish bark that peels easily. Isolated melaleuca trees were first reported in the eastern portions of the park in 1967.⁷¹⁵

⁷¹⁴ Biologist Robertson to Chief Ranger Campbell, Feb. 27, 1956, EVER 22970; Draft Exotic Plan Management Fact Sheet, Feb. 12, 2004, EVER 43414.

⁷¹⁵ C. E. Turner, T. D. Center, D. W. Burrows, G. R. Buckingham, “Ecology and Management of *Melaleuca Quinquenervia*, an Invader of Wetlands in Florida, U.S.A.,” *Wetlands Ecology and Management* 5/3 (1997):165–78; “Fast-Spreading Tree Chokes Glades, But Control Programs Are Working,” *Miami Herald*, July 3, 2006; Ernest F. Coe to Frederick V. Coville, Botanist, USDA, October 19, 1933, CP, EVER 13650; Status of Exotic Pest Plants/Everglades National Park, n.d. [2004], EVER 43414.



Figure 14-4, Melaleuca trees

Brazilian pepper (*Schinus terebinthifolius*), native to coastal Brazil, Paraguay, and Argentina, was introduced in Florida as an ornamental plant as early as the 1840s (figure 14-5, a monotypic stand of Brazilian pepper in the Hole-in-the-Donut). It is an evergreen that can grow to about thirty feet, often growing in dense stands that shade out other vegetation. Brazilian pepper produces white flowers and fruit that turn a deep red when ripe. It had already appeared in the park at the time of establishment, and Dr. Frank Craighead Sr. in 1961 predicted that it might become a serious problem. The species was not recognized as a pressing issue until around 1970. The rock-plowed soils of the Hole-in-the-Donut were particularly susceptible to invasion by pepper plants.



Figure 14-5, a monotypic stand of Brazilian pepper in the Hole-in-the-Donut

Over time, a number of other exotic plant species began to appear in the park. In the 1960s, park staff was alarmed by the rapid growth of water hyacinth (*Eichhornia crassipes*) in the L-67 extension canal and adjacent wetlands. In recent decades, old world climbing fern (*Lygodium microphyllum*) and lather leaf (*Colubrina asiatica*) have emerged as troublesome invaders. It was clear that the exotic flora had a number of negative consequences for Everglades ecosystems. These included displacement of native plants, loss of habitat value for wildlife, changes to the water regime, changes to soil characteristics, and changes in fire regimes. The park began a systematic effort to address exotic plants in spring 1968. The first step was to survey the park to learn what inroads had already been made. The park developed an exotic plant control plan in 1973. The plan identified melaleuca control as the top priority. It further observed that “it will be impossible to completely control the major exotic plants within the Park. The goal will be to maintain a holding action against invasion at as many areas as possible.”⁷¹⁶

In 1963, the park began attacking Australian pine at waterfront areas, especially where the tree threatened to disrupt sea turtle and crocodile nesting areas. By the early 1970s, park staff were using a Hypo-Hatchet® tree injector to inject herbicide into the trees and reporting a very high kill rate. The pine is largely under control on keys and coastal areas, but it remains in southeastern portions of park. In the 1970s and early 1980s, park staff addressed melaleuca by pulling up seedlings and cutting down trees, then applying herbicides to the stumps. In the early 1970s, the park attempted to determine what herbicides were most effective against Brazilian pepper. Fire was used experimentally without success. Herbicides and physical removal were used against water hyacinth.⁷¹⁷

The park undertook a thorough review of its exotic plant management activities in 1983 and prepared an exotic plant control handbook. The following year it hosted an exotic woody plant workshop. Concern over exotics was becoming more widespread, and the Florida Exotic Pest Plant Council was established in 1984 by concerned state and federal agencies, corporations, and individuals to address invasive flora in a more systematic fashion. Everglades National Park has played an active role with the council since its inception, with park scientists serving on its board. In its early years, the council identified the control of melaleuca as its top priority. Scientists from a wide range of disciplines, land managers, and public officials participate on the council. It publishes a list of invasive plants in the state and has makes available much valuable research and

⁷¹⁶ Draft Exotic Plan Management Fact Sheet; Water Hyacinth (*Eichhornia crassipes*) in Everglades National Park, Feb. 1976, EVER 22970; Frank J. Mazzotti, Ted D. Center, F. Allen Dray, and Dan Thayer, “Ecological Consequences of Invasion by *Melaleuca Quinquenervia* in South Florida Wetlands,” University of Florida, <http://edis.ifas.ufl.edu/uw123>; Larry Bancroft, Exotic Plant Control Plan, 1974–1979, July 1973, EVER 42242, ser. IV.

⁷¹⁷ Summary of Terrestrial Resource Management in Everglades National Park, 1975; Water Hyacinth (*Eichhornia crassipes*) in Everglades National Park, Feb. 1976, EVER 22970; SAR, 1972, 1975.

treatment advice. Five years after the council's establishment, the *Wall Street Journal* described the statewide effort against exotics as just getting started.⁷¹⁸

In November 1988, the park hosted an exotic pest plant symposium organized by park biologist Robert Doren. This was described as the first event concerned with exotics that attracted broad participation from South Florida agencies. The park and others have experimented with biological control methods, the use of an invasive species' natural predators to limit its spread. An example is the introduction of the melaleuca snout beetle (*Oxyops vitiosa*). The beetle is established in the park and is of some help in limiting the spread of melaleuca. The Water Resources Development Act of 2007 included funding for the Department of Agriculture to conduct significant additional work on developing biological control agents for exotic plants in the Everglades. For a number of years, the NPS has partnered with the South Florida Water Management District in conducting systematic overflights of the park to monitor the distribution of exotics. The goal is to do the airborne monitoring every other year, but funding levels do not always allow this. The monitoring is coordinated by the NPS's Exotic Plant Management Team Program.⁷¹⁹

Melaleuca and Australian pine were well established in the East Everglades expansion area. Prior to the 1989 act that added 109,000 acres of the East Everglades to the park, park managers concentrated on establishing a buffer zone along the eastern park boundary. The aim was to eradicate the two invasive species on both sides of the boundary, with the Park Service and the South Florida Water Management District working in tandem. Once the East Everglades lands became part of the park, eradication of these two species became the park's top exotic plant control priority. Both melaleuca and Australian pine continue to enter the park from seed sources east of the park boundary. The park has attempted to quarantine these species by applying herbicides from the west to the east, attacking the areas of least concentration first. As of 2012, 99 percent of the melaleuca in the park had been treated once, but follow-up treatments are needed. Most of the park's Australian pine had been initially treated by 2012, but approximately 800 acres in the far southeastern portion of the mainland awaited initial treatment.⁷²⁰

⁷¹⁸ SAR, 1983, 1984, 1986; Michael J. Bodle and Robert F. Doren, "The Exotic Pest Plant Councils," *Castanea* 61/2 (Sept. 1996):252–254; Eric Morgenthaler "Everglades Park Battles to Stem Invasion of Exotic Foreign Plants," *Wall Street Journal*; Jonathan Taylor, personal communication, Jan. 14, 2013.

⁷¹⁹ SAR, 1988, 2000; Jonathan Taylor, personal communication, Jan. 14, 2013; National Research Council, *Progress Toward Restoring the Everglades: The Fifth Biennial Review—2014* (Washington, DC: National Academies Press, 2014), 79, http://www.nap.edu/catalog.php?record_id=18809. Hereafter cites as *Progress*, 2014.

⁷²⁰ SAR, 1991; Cooley, "Fiscal Year 2012 Report," 4–5; Hillary Cooley, personal communication, Sept. 13, 2013.

The South Florida and Caribbean Parks Exotic Plant Management Plan

Everglades National Park in the early 2000s lacked a comprehensive document on exotic plants that satisfied National Environmental Protection Act criteria. Plant ecologist Jonathan Taylor and others came to realize that a number of NPS units in Florida and the Caribbean had the same deficiency. These parks were known to “have similar goals to preserve and protect park resources, face similar issues related to the presence and spread of exotic plants, and use similar techniques to manage exotic plants.” Hoping to share expertise and resources, the NPS developed the *South Florida and Caribbean Parks Exotic Plant Management Plan*. The plan set up a framework for nine NPS units threatened by invasive plants to analyze and evaluate threats and proposed management actions. The preferred alternative in the plan emphasized active restoration of native plants. Initial work on the plan and its associated environmental impact statement began in 2003 and a draft was released for public review in fall 2003. The final version took effect August 30, 2010, and the plan calls for annual reviews.⁷²¹

Brazilian Pepper in the Hole-in-the-Donut

The park faced a particularly difficult battle with Brazilian pepper when farming ended in the Hole-in-the-Donut in the mid-1970s. Before the 1950s, this area had been short hydroperiod glades with fingers of pine upland. After World War II, about 9,000 acres in the Hole-in-the-Donut was under cultivation, two-thirds of that acreage being rock plowed (see Chapter 6). Once the farmlands were in government ownership, the NPS was eager to reverse the effects of agriculture and restore natural conditions. Immediately upon farming’s end, the park planted former fields with slash pine, sedges, and grasses, but without success. In some cases, the park had to drill 18-inch-deep holes in the limestone bedrock to plant saplings. Park staff also established test plots where different treatments of the disturbed area were tried—disking, mowing, bulldozing, and burning. None of the treatments promoted a return to native vegetation. Worse, throughout the abandoned agricultural fields, Brazilian pepper rapidly took over. The drier, more aerated soil and traces of fertilizer left from agriculture proved particularly conducive to the invader. The pepper formed dense stands, known as monotypic stands, which crowded out all other vegetation.⁷²²

⁷²¹ The other NPS units involved were Big Cypress National Preserve, Biscayne National Park, Canaveral National Seashore, Dry Tortugas National Park, Buck Island Reef National Monument, Christiansted National Historic Site, Salt River Bay National Historical Park and Ecological Preserve, and Virgin Islands National Park. Jonathan Taylor, interview by Bonnie Ciolino, Bethany Serafine, and LuAnne Jones, Nov. 3, 2011; “South Florida Parks Seek Input for the South Florida and Caribbean Parks Exotic Plant Management Plan,” NPS media release, Oct. 2, 2006; 75/167 Fed. Reg. 52967–52969 (Aug. 30, 2010).

⁷²² Robert F. Doren and Louis D. Whitaker, Plan for Mitigation and Monitoring of Secondary Successional Communities in Everglades National Park: Hole-in-the-Donut, Dec. 6, 1988, EVER 22965; Taylor interview; SAR, 1991.

Efforts to remove the pepper trees with herbicides and burning were failures, largely because pepper seeds remaining in the soil survived the treatments. In the late 1980s, resource managers tried a new tactic, attempting to recreate a slough and a hammock landscape by removing all soil material in the slough location and piling it up to form a hammock. The hardwoods planted on the artificial hammock died, but native wetland plants took hold in the slough. To validate these results, between 1989 and 1992, the park removed soil down to the substrate on 45 acres and partially removed soil on 15 acres. Analysis of the test results showed that only total removal of the soil produced a return to native vegetation (Figure 14–6, removing soil in the Hole-in-the Donut). The U.S. Army Corps of Engineers and the Dade County Department of Environmental Resources Management participated in these tests.⁷²³



Figure 14–6, removing soil in the Hole-in-the Donut).

Although the effort would be very expensive, the park concluded that only total removal of the soil would accomplish restoration goals. In 1993, the NPS, Miami-Dade County and the National Parks Foundation (NPF) entered into an agreement to restore approximately 6,300 acres in the Hole-in-the-Donut. Funding for the project came from a wetlands mitigation trust fund established by Miami-Dade County, and the NPF agreed to accept and hold funds from the county. Developers who were allowed to fill in degraded wetlands in other parts of the county paid up to \$19,000 an acre into the fund as mitigation. In 1996, the park was granted permits from the Corps of Engineers and the state of Florida, and the project began in 1997. The environmental assessment conducted by the Corps identified several alternatives for deposition of up to 17 million cubic yards of removed soil, with trucking it off-site the preferred alternative.⁷²⁴

After the Corps issued its permit, there was a growing realization that trucking the soil off-site would be expensive and likely require the park to replace a dozen miles of road every two to four years. The state also decided that the costs of trucking the soil out of

⁷²³ NPS, “Environmental Assessment, Hole-in-the-Donut Soil Disposal” (Homestead, FL: NPS, Aug. 1998), 9.

⁷²⁴ Jonathan Taylor, interview by author, Sept. 26, 2013; “A Mountainous Challenge in the Heart of the Everglades,” *Miami Herald*, Apr. 20, 1997.

the park were not a legitimate mitigation expense, and the NPS would need to find funding for it. As a result, the state's permit allowed the indefinite retention of the soil on-site by piling into mounds within the Hole-in-the-Donut. The NPS prepared a supplemental environmental assessment in 1996 focusing on the issues surrounding soil disposal. This assessment emphasized the damage to roads and degradation of the visitor experience that twelve to sixteen thousand truck trips each winter would cause if the soil was removed. Instead, the document called for creating five to twelve soil disposal mounds on 2 to 3 percent of the restored acreage. It was acknowledged by all concerned that piling up the soil in the park was a disruption of the natural environment. Ultimately as the project proceeded, six soil mounds totaling 230 acres were created in the park. The mounds were to have been located away from visitor use areas and cultural resources. For reasons that remain murky, one mound was located near the historic route of the Ingraham Highway and a second within sight of the HM-69 missile base.⁷²⁵

The issues surrounding soil disposition aroused considerable local controversy. Some farmers who were forced out of the Hole-in-the-Donut in the 1970s expressed outrage that the NPS was creating artificial conditions on a portion of the acreage they had promised to restore. One former farmer, Rosario Strano, complained, "They're not restoring, they're destroying. They're down there digging up good soil." Dr. Murray Mantell, a professor of civil engineering at the University of Miami, had a novel, perhaps tongue-in-cheek, proposal. He suggested that the soil be piled up to form mountains that could be covered with artificial snow for a ski resort within the park. The NPS declined this solution (figure 14-7, a spoil pile in the Hole-in-the-Donut with native vegetation).⁷²⁶



Figure 14-7, a spoil pile in the Hole-in-the-Donut with native vegetation

⁷²⁵ NPS, Decision Notice and Second Finding of No Significant Impact for Restoration of Wetlands in the Hole-in-the-Donut, with attached Supplemental Environmental Assessment (Homestead: NPS, Sept. 18, 1996); Jonathan Taylor, interview by author, Sept. 26, 2013.

⁷²⁶ "Schussing through the Everglades?," *Orlando Sentinel*, Aug. 17, 1997.

The Hole-in-the-Donut restoration project has been a stunning success. When the limestone is exposed, summer rains flood out any pepper seedlings. Algae and other plant material create a layer of marl, and sawgrass and other native plants rapidly become established, without the need for plantings by park staff. After fifteen years, soil accumulations average about 3.7 centimeters, within the range considered optimal for rocky wetlands areas in the Everglades. Within a few years, native and migratory birds colonized the reclaimed acreage, and raccoons, deer, panthers, and black bears moved in. The project has been expensive, with each reclaimed acre costing between ten and fifteen thousand dollars. As of October 2013, 4,850 of the targeted 6,300 acres had been restored. Early concerns among environmentalists over the soil mounds have largely died away. Interest earned from the mitigation trust fund allows staff to mow the mounds to prevent pepper from being reestablished. One mound has been released to natural succession, with hardwood hammock trees becoming established. The mounds have proven to be good habitat for invertebrates, including rare and endangered butterflies. Bird watchers love the mounds because they are excellent observation platforms. The preferred alternative in the park's draft GMP contemplates constructing spur trails to one or two mounds to be used as overlooks.⁷²⁷

Brazilian pepper also covers tens of thousands of acres on the fringes of mangrove forests on the Gulf side of the park. The density of these stands varies, but most are in areas that are very difficult to access. Crews coming in to apply treatments would need to use helicopters. Helicopter landings are problematic in wilderness areas, and there are few landing areas where the pepper grows. To date, the NPS had not identified "a cost-effective strategy for systematically removing Brazilian pepper" from these areas. The best that the park has been able to accomplish with available funds is to spot treat Brazilian pepper at high-priority locations, for example, where impacts of the plant on rare or endangered species is a concern.⁷²⁸

Old World Climbing Fern and Lather Leaf

Old world climbing fern was first noticed in Everglades National Park in 1999. It is a twining and climbing perennial that starts on the ground and grows up shrubs and trees, eventually smothering them. Within the park it is mostly found in remote Gulf coast areas from Cape Sable to Everglades City. In 2010, old world climbing fern was estimated to be growing on at least 2,000 acres in the park. The total could be higher because it is

⁷²⁷ Craig S. Smith, Laura Serra, Yuncong Li, Patrick Inglett, and Kankia Inglett, "Restoration of Disturbed Lands: The Hole-in-the-Donut Restoration in the Everglades," *Critical Reviews in Environmental Science and Technology* 41, no. 6 (2011):723–39; "Reviving 'Hole in the Donut' an Everglades Success Story," *Miami Herald*, June 26, 2001; Jonathan Taylor, interview by author, Sept. 26, 2013; Jonathan Taylor, personal communications, Jan. 14 and Sept. 26, 2013; Draft GMP, 67.

⁷²⁸ Cooley, "Fiscal Year 2012 Report," 5.

unlikely that all stands of the plant can be observed from aircraft flying at 500 feet. Park scientists believe that the affected area has expanded slightly since then. The park has used herbicides released from the air to control this invasive, but funding has not been available for this treatment since 2008. In 2013, the park released brown Lygodium moths (*Neomusotima conspurcatalis*) in affected park areas. This species feeds on old world climbing fern, and this method of biological control previously has been used with some success in Florida's Jonathan Dickenson State Park. Park scientists will be monitoring the results of the introduction of this moth species.⁷²⁹

Park collaborator Frank C. Craighead recognized lather leaf in the park as early as 1954, but it did not become a serious concern until the 1990s. By then, the species was noted as common on upper dunes, coastal strand habitat, buttonwood forests, and coastal hardwood hammocks along Florida Bay and in the Ten Thousand Islands. Lather leaf is difficult to identify in aerial survey efforts, making it difficult to estimate how much of the park is affected. The plant has been controlled in limited areas by persistent manual removal and herbicide application.⁷³⁰

Exotic Flora Introduced by the NPS

The planting plans used during the Mission 66 period in the 1950s and 1960s frequently specified the use of exotic plants. As attitudes within the NPS evolved, this practice was abandoned. In 1979, the park removed several hundred nonnative coconut palms from Flamingo and the headquarters area on Parachute Key.⁷³¹

⁷²⁹ Jonathan Taylor, "Management of Old World Climbing Fern in Everglades National Park," in *Old World Climbing Fern Management Plan for Florida*, 2nd ed., 2006; University of Florida IFAS, http://hillsborough.extension.ufl.edu/homegardening/PDFs/Fact%20Sheets/Invasives_Old%20World%20Climbing%20Fern.pdf; Anthony Boughton and Ted Center, "Biological Control of Old World Climbing Fern, *Lygodium microphyllum*, Recent Progress with the Brown Lygodium Moth," Florida Exotic Pest Plant Council, Apr. 6, 2010, http://www.ars.usda.gov/research/publications/publications.htm?seq_no_115=251047; Hillary Cooley, personal communication, Sept. 13, 2013.

⁷³⁰ Cheryl M. McCormick, compiler, *Columbian Asiatic (Lather Leaf) Management Plan* (N.p.: Florida Exotic Pest Plant Council, 2007), 37–39.

⁷³¹ SAR, 1979.

Invasive Fishes

Various tropical fishes were among the first invasive animals to cause concern in the park. Once the extensive system of canals of the Central and Southern Florida Flood Control Project were built, nonnative fishes (and species native to other parts of Florida) had an easy route into park waters. As early as December 1969, Everglades rangers received instructions to preserve or photograph any nonnative fishes they encountered. At the time, the so-called walking catfish (*Clarias batrachus*) was creating a media stir. *C. batrachus* was one of a number of nonnative fish brought to Florida for the aquarium trade that were released into the wild and eventually established breeding populations. As described in Chapter 12, park managers had limited information on freshwater fish populations prior to the late 1970s. Once systematic sampling began, it was learned that the walking catfish and the black acaca (*Chilasoma bimaculatum*) were breeding in park waters (figure 14–8, invasive freshwater fish).⁷³²

The appearance of nonnative fishes in park waters seems to be tied to changes in regional water management practices. Not long after the capacity of canals near the park was expanded and water began being pumped directly from the L-31W Canal into Taylor Slough in 1981, six new nonnative fishes appeared in the eastern section of the park. After 1999, when water managers began delivering more water to the eastern side of the park and water overtopped the banks of the C-111 and L-31W Canals, eight additional nonnative species were found in the park. To date, seventeen nonnative species have been detected in park waters. Two of these, the Mozambique tilapia and the banded cichlid, are not believed to be breeding in the park. Ten of the seventeen species are from the Cichlidae family, a large family of tropical fishes with members native to Central and South America, Africa, and Asia. Among these are the oscar (*Astronotus ocellatus*), Mayan cichlid (*Cichlasoma urophthalmus*), spotted tilapia (*Tilapia mariae*), blue tilapia (*Oreochromis aureus*), and African jewelfish (*Hemichromis letourneuxi*). Fish from the Cichlidae family have the ability to adapt to a variety of habitats. Furthermore, they occupy a similar ecological niche to native sunfishes and have the potential to outcompete them. Nonnative fish from other families that have become established in the park include the Asian swamp eel (*Monopterus albus*) and the pike killifish (*Belonesox belizanus*). Some of these invasive species do provide prey for larger native fish, such as the largemouth bass (*Micropterus salmoides*), or for wading birds.⁷³³

⁷³² Chief Ranger, EVER, to Field, Dec. 19, 1969, EVER 22965; “Catfish That ‘Walks’ Is Here to Stay, Florida Finds,” *New York Times*, Nov. 24, 1968; Jeffrey L. Kline, William F. Loftus, Kevin Kotun, Joel C. Trexler, Jennifer S. Rehage, Jerome J. Lorenz, and Michelle Robinson, “Recent Fish Introductions into Everglades National Park: An Unforeseen Consequence of Water Management?,” *Wetlands*, Jan. 17, 2013, DOI 10.1007/s13157-012-0362-0. William Loftus, interview by author, June 13, 2012. Native to Africa and Southeast Asia, *C. batrachus* uses its dorsal fins to wriggle (not actually walk) up to seventy-five feet from one body of water to another.

⁷³³ Kline et al.; Jeffrey Kline, personal communication, June 28, 2013.



Figure 14-8, invasive freshwater fish

The long-term effects of the invaders on the ecosystem are largely unknown. Recent studies indicate that the African jewelfish and the Mayan cichlid may pose a particular threat. When small native fishes seek refuge in the deeper waters of solution holes and creek headwaters in the dry season, they appear to be subject to increased predation by these species. It is generally thought that once a nonnative fish species is established in the park, it is highly impractical, if not impossible, to eradicate it. Current NPS management efforts therefore are directed to stopping invaders before they reach the park. If nonnative fishes are detected in canals bounded by levees before they can enter the park, there is a better chance of eradicating them. The park has stepped up efforts to educate the public about the dangers of releasing nonnative fish, encourage responsible practices by breeders of aquarium fishes, and achieve water management practices that are favorable to native species. The park is an active participant in the Everglades Cooperative Invasive Species Management Area (CISMA) effort, described further below.⁷³⁴

⁷³⁴ J. S. Rehage, S. E. Liston, K. J. Dunker, and W. F. Loftus, "Fish Community Responses to the Combined Effects of Decreased Hydroperiod and Nonnative Fish Invasions in a Karst Wetland: Are Everglades Solution Holes Sinks for Native Fishes?," *Wetlands*, Jan. 17, 2013, DOI 10.1007/s13157-012-0361-1; E. J. Harrison, J. J. Lorenz, and J. C. Trexler, "Per Capita Effects of Nonnative Mayan Cichlids (*Cichlasoma urophthalmus*; Gunther) on Native Fish in the Estuarine Southern Everglades," *Copeia* 1, March 2013, 80-96; Jeffrey Kline, personal communication, June 28, 2013.

Nonnative Land Animals

Over the decades, a number of nonnative land animals came to reside in the park, including feral hogs, armadillos, and iguanas. The Spanish brought domesticated swine (*Sus scrofa*) with them on their invasions of the Southeast in the 1500s, and feral populations have existed in Florida ever since. The main threat from hogs is the damage to native vegetation caused by their foraging. In 1930, a group of U.S. senators scouting the proposed park area saw wild hogs in the area. Ranger Erwin Winte in 1960 noted evidence of hog rooting on a tree island in the Shark River Slough. Wild hogs today are found in every county in Florida, with a statewide population estimated at 500,000 to two million. In 2012, some Florida hunters began the practice of shooting hogs from the air using chartered helicopters. This occurred on a large private ranch in the north Everglades, well away from the park. In the park, hogs are confined mostly to upland areas. The nine-banded armadillo (*Dasypus novemcinctus*) is native to South Texas and Mexico, but it rapidly expanded its range in the twentieth century. This armored mammal has been in Everglades National Park since the early 1970s, if not earlier. Both hogs and armadillos have emerged as good food sources for panthers.⁷³⁵

A number of lizards from the exotic animal trade have established themselves in the park. These include the brown anole (*Anolis sagrei*), knight anole (*Anolis equestris*), common green iguana (*Iguana iguana*), and three species of gecko. To date, these lizards appear not to have caused serious damage. A more recent reptilian invader, the Argentine tegu lizard (*Tupinambis merianae*), has caused more concern. The tegu is omnivorous and can tolerate temperatures approaching freezing. A host of other exotic animals are present in Florida, not far from the park's boundary. Many could in the future become park residents. The Burmese python is the invader that aroused the greatest concern in the 2000s.⁷³⁶

⁷³⁵ "New Territory Seen by Senate Group in Blimp," *Miami Daily News*, Dec. 30, 1930; "Wild Hogs: Nuisance or Hunting Opportunity?," Florida Fish and Wildlife Conservation Commission, <http://myfwc.com/news/news-releases/2012/january/03/outta-jan/>; "Hunters Use Helicopters to Target Nuisance Wild Pigs on Florida Ranch," *Miami Herald*, Mar. 25, 2012; Joseph M. Schaeffer and Mark E. Hostetler, "The Nine-Banded Armadillo (*Dasypus novemcinctus*)," University of Florida IFAS, <http://edis.ifas.ufl.edu/uw082>; Wes Phillips to Larry Bancroft, May 8, 1973, EVER 22965.

⁷³⁶ "Hunt is on for Tegu Lizards in South Florida," *Miami Herald*, Sept. 26, 2013; Everglades National Park Exotic Species List, <http://www.nps.gov/ever/forteachers/upload/BackgroundInformation.pdf>.

Burmese Pythons and Other Constrictors

For decades, several python species have been imported into and bred in Florida for those who crave unusual pets. Two subspecies of *Python molurus*, the Burmese python (*Python molurus bivittatus*) and the Indian python (*Python molurus molurus*) have become a large problem for the Everglades National Park (figure 14–9, Burmese python).⁷³⁷ Several other python species, including the African rock python, are also of concern. The Burmese python is one of the largest snakes in the world; females can reach more than twenty feet in length and weights of 200 pounds. Burmese pythons are tan with distinctive brown and black markings on the back and sides. They kill by first gripping the victim with their teeth and then wrapping their body around it and smothering it. The species is semiaquatic, known to hunt on dry land and in water, and needs only a slightly elevated hammock for nesting. It was known for some time that Florida owners were releasing pythons when they became unmanageably large. The first confirmed capture of a Burmese python in the park came in 1979. Hurricane Andrew in 1992 demolished a number of exotic pet warehouses, releasing an unknown number of pythons into the wild. Until the year 2000, only about a dozen had been found in the wild throughout South Florida. From that point, sightings and captures skyrocketed. By 2007, 250 to 300 individual pythons annually were being captured or found dead within the park or on adjacent South Florida Water Management District land.⁷³⁸



Figure 14–9, Burmese python

⁷³⁷ Other large snakes including the northern African python (or African rock python) (*Python sebae*), common boa (*Boa constrictor*), reticulated python (*Python reticulator*), and green anaconda (*Eunectes murinus*) have been found in the wild in the Everglades, but only the Burmese python is known to have a significant breeding population. The northern African python does appear to be breeding in a localized area just southeast of the intersection of Tamiami Trail and Krome Avenue, not far from the park boundary. Florida Museum of Natural History website, <http://www.flmnh.ufl.edu/herpetology/fl-guide/Pythonsebae.htm>.

⁷³⁸ Rebecca G. Harvey, Matthew L. Brien, Michael S. Cherkiss, Michael Dorcas, Mike Rochford, Ray W. Snow, and Frank J. Mazzotti, “Burmese Pythons in South Florida” (Gainesville, FL: University of Florida IFAS, July 2008), <http://edis.ifas.ufl.edu/uw286>.

Burmese pythons pose a particular threat in the Everglades because they can adapt to a variety of habitats, consume a wide variety of prey, live fifteen to twenty-five years, can move great distances, and are prolific breeders. Analysis of the stomachs of these serpents has shown that they eat mice, rats, rabbits, muskrats, raccoons, opossums, deer, bobcats, egrets, and more. A study published in early 2012 documented a decrease in populations of raccoons, opossums, rabbits, and bobcats observed at night in the park from 2003 to 2011. Although the authors cautioned that this is not proof that predation by pythons is the cause, the results are suggestive. Beginning in late 2005, scientists from the University of Florida and the park began surgically implanting radio transmitters in a few pythons, to better track their movements. Radiotelemetry led to the discovery in May 2006 of the first nest of python eggs in Everglades National Park, confirming that the giant snake was indeed breeding in the park.⁷³⁹

The invasion of the Everglades by giant pythons that squeeze the life out of their prey was a story that few media outlets could resist, especially after video of “gator vs. python” went viral. This epic, twenty-four-hour struggle started on a Sunday morning in January 2003, when visitors on the Anhinga Trail observed a full-grown alligator and a large python in a clinch. The gator had bitten down on the snake, which then wrapped itself around the gator. Deputy Superintendent John Benjamin happened to be there to photograph a section of the boardwalk that needed repair. His son, also John, who was with him, shot video and placed it on the web, causing a sensation. Media outlets from the *National Examiner* to *National Geographic* picked up the story. In 2009, *The New Yorker* ran a nine-page feature on exotic animals in Florida, featuring the python prominently and quoting park biologist Ray W. “Skip” Snow extensively. Reality television was not far behind. The National Geographic Channel first aired “Python Hunters” in July 2010. Public television’s highly regarded *Nature* series produced an episode “Invasion of the Giant Pythons.” Since 2003, video of other python/alligator encounters has been posted.⁷⁴⁰

As land managers became aware of the python threat, a number of steps were taken. Following an invasive reptile management workshop in 2005, the NPS joined with several other institutions to form the Python Science Support Team. The support team has been focusing on ways to capture and remove pythons. Scientists have no present hope of eliminating pythons from the park. A key concern is to insulate bird rookeries from

⁷³⁹ Harvey, et al.; Michael E. Dorcas, John D. Willson, Robert N. Reed, Ray W. Snow, Michael R. Rochford, Melissa A. Miller, Walter E. Meshaka Jr., Paul T. Andreadis, Frank J. Mazzotti, Christina M. Romagosa, and Kristen M. Hart, “Severe Mammal Declines Coincide with Proliferation of Invasive Burmese Pythons in Everglades National Park,” *Proceedings of the National Academy of Science* 109, no. 7 (Feb. 14, 2012), <http://www.pnas.org/content/109/7/2418.full?sid=42030396-df1f-4b93-be77-fbfade00a499>.

⁷⁴⁰ Burkhard Bilger, “Swamp Things,” *The New Yorker*, Apr. 20, 2009, 83; John Benjamin, interview by author, July 20, 2012; National Geographic Channel, <http://www.nationalgeographic.com/wild/shows-python-hunters/>; <http://www.pbs.org/wnet/nature/episodes/invasion-of-the-giant-pythons/introduction/5532/>.

predation by pythons, perhaps by trapping and relocating or euthanizing pythons in the immediate vicinity. It will also be important to try and keep pythons out of the Florida keys. The keys are home to small populations of several endangered species, such as the Key Largo cotton mouse (*Peromyscus gossypinus allapaticola*), Lower Keys marsh rabbit (*Sylvilagus palustris hefneri*), and the key deer (*Odocoileus virginianus clavium*) that would be particularly vulnerable to pythons.⁷⁴¹

In 2007, the Florida legislature passed legislation addressing “reptiles of concern.” The law directed the Florida Fish and Game Conservation Commission (FWC) to draw up a list of nonnative venomous reptiles and other reptiles of concern. Anyone keeping an animal on the list was required to obtain a \$100 annual permit. The commission was given the authority to inspect the premises of any permit holder and revoke the permit if violations were detected. The law also provided penalties for releasing such animals into the wild. The FWC identified four python species (Burmese, articulated, African rock, and amethystine or scrub), the green anaconda, and the Nile monitor lizard as reptiles of concern. It also required that owners implant an identifying microchip in each animal and prepare a critical incident and disaster plan detailing how animals would be secured or evacuated in an emergency. After a Burmese python killed a two-year-old Florida girl in 2009, the legislature in 2010 banned the possession, importation, sale, trading, or breeding of the five species. Existing owners of such animals were exempted, and Florida breeders of these reptiles were permitted to continue operating.⁷⁴²

Effective March 23, 2012, the U.S. Fish and Wildlife Service declared the Burmese python, Indian python, Northern African Python, Southern African python, and yellow anaconda to be injurious reptiles. This action brought the five species under the provisions of the Lacey Act and made it a federal offense to import these snakes and their eggs into the United States or to transport them across state lines.⁷⁴³ Although these state and federal laws were well-intentioned, they came too late to do much good for the Everglades.

Efforts to control invasive pythons have assumed some very creative dimensions. From 2010 through 2013, the Florida Fish and Wildlife Conservation Commission sponsored an annual sanctioned hunt of Burmese pythons and other injurious reptiles on state land. A much-ballyhooed “Python Challenge” in 2013 drew 1,500 participants, but resulted in the capture of only sixty-eight pythons. The event failed to significantly reduce python populations, but scientists who performed necropsies on the animals gained insights into their diets. Given the meager results, the state has no current plans to repeat the event. The

⁷⁴¹ Harvey, et al.; Bilger, 87.

⁷⁴² Florida statutes 2007–239 and 2010–185; State Representative Ralph Poppell, “Florida is Proactive about Exotic Reptiles,” *Gainesville Sun*, July 24, 2009; Responsible Exotic Animal Ownership website, <http://www.rexano.org/StatePages/FloridaFrame.htm>.

⁷⁴³ 77 Fed. Reg. 3329–3330 (Jan. 23, 2012).

state continues to train and license python hunters, who then have a better chance of locating the elusive beasts than the average hunter. Everglades National Park also has about 30 authorized agents who track and try to capture pythons in the park for research purposes.⁷⁴⁴

The detection of pythons by specially trained dogs has shown some promise. Beginning in the 1990s, dogs have been used on the island of Guam to detect brown tree snakes on outgoing planes and ships. Biologist Lori Oberhofer had worked with snake detections on Guam before coming to Everglades National Park in 2004. She wanted a dog as a companion in her new home and decided to get a beagle puppy and train it to detect pythons. She obtained a puppy from a Missouri breeder who specialized in rabbit-hunting beagles, naming him Pete. Oberhofer began training Python Pete at the age of three months by wiping paper towels on baby pythons and rewarding Pete with a treat when he detected the scent. As the dog matured, she began working with him outdoors. After his first birthday, Pete showed some ability in detecting pythons in the wild. Python Pete became a media celebrity and Oberhofer did many interviews with him; the park superintendent would occasionally make public appearances with the dog. These media contacts substantially increased public awareness of the issue of nonnative species in the park. Oberhofer's work with Pete was outside of her job description and took up a lot of her own time, so she was not able to bring Pete to the highest level of training. By 2010, Oberhofer had largely stopped working with Pete, who then retired to a life of chasing rabbits in Kentucky.⁷⁴⁵

Oberhofer's success with Pete ensured that the idea of using dogs to detect pythons remained under active consideration within the park and the Python Science Support Team. When the park received funding to expand its efforts to control pythons, it partnered with Auburn University in a pilot program. Auburn had worked with the military to train dogs to detect explosives and also had an EcoDogs program that trained dogs to detect plants and animals important to ecological research. The park partnered with Auburn on a pilot program, and in winter 2010/11, two black Labrador retrievers were in the park with their trainers and university scientists. Using designated plots seeded with pythons, the team demonstrated that dogs were about two times more efficient than humans in detecting snakes. Whether tracking pythons with dogs is cost-effective remains a question. The dogs require at least six months of specialized training and must work with skilled handlers. The handlers cannot capture snakes, so at least one other individual must be part of the tracking team. The use of tracking dogs is one tool among several that may be used in the future to address the python issue, especially for locating snake nests.⁷⁴⁶

⁷⁴⁴ "Hunters Unleashed on Florida Python Problem," *Chicago Tribune*, Feb. 24, 2010; "Officials Give Up on Evicting Pythons," *Washington Post*, Mar. 22, 2014; "The Python Invasion Project: Meet the Hunters," *Miami Herald*, June 9, 2014.

⁷⁴⁵ Lori Oberhofer, personal communication, Nov. 7, 2014.

⁷⁴⁶ "A Giant Battle: Auburn Canines Help in Search for Everglades' Pythons," Auburn University press release, Feb. 15, 2012, http://ocm.auburn.edu/featured_story/pythons_dogs.html; "Snake-Sniffing Dogs Help Find Pythons in the Park," *Washington Post*, May 3, 2012; Skip Snow, personal communication, Nov. 13, 2014.

An Invasive Insect Species: The Red Imported Fire Ant (*Solenopsis invicta*)

The red imported fire ant arrived in the American South from South America in the 1930s and is well established throughout Florida, including Everglades National Park. The ant has aggressive foraging behaviors, with individuals stinging their prey en masse. In the American South, fire ants frequently become the dominant ant species because of a lack of predators and competitors. Research and observations have shown the fire ant to be a direct and indirect threat to a number of animals found in the Everglades, notably the Florida tree snail, loggerhead turtle, and alligator. In areas of Florida outside Everglades National Park, researchers have observed fire ants killing tree snails and hatchling loggerhead turtles. Research also has shown that both turtle and alligator nests that are infested by fire ants have lower success rates. Fire ants may also adversely affect the foraging behavior of small mammals where fire ant mounds are plentiful. The effect of fire ants on native animals in Everglades National Park is largely conjectural at the moment, pending research efforts specifically targeting the park.⁷⁴⁷

⁷⁴⁷ C. R. Allen, D. M. Epperson, and A. S. Garmestani, "Red Imported Fire Ant Impacts on Wildlife: A Decade of Research," *American Midland Naturalist* 152 (July 2004): 88–103; B. Smith, "A Partial Survey of Florida Tree Snail (*Liguus fasciatus*) Distribution in Big Cypress National Preserve," report submitted to NPS, 1997.

Cooperative Efforts and Public Awareness

Everglades National Park has pursued a number of cooperative efforts to combat invasive species. The park's involvement with the Florida Exotic Pest Plant Council has already been mentioned. In late 2008, the park joined with FWS, the Corps, the SFWMD, and the Florida Fish and Wildlife Conservation Commission to form the Everglades Cooperative Invasive Species Management Area (CISMA). Miami-Dade County later affiliated with the CISMA. The Everglades CISMA was created to provide a framework for interagency cooperation on invasive species issues and facilitate coordination with the CERP as individual restoration projects went forward.⁷⁴⁸

A major focus of the interagency effort has been educating the public about the issues with invasive species and getting the public's cooperation in preventing future problems. The park and the Florida Fish and Wildlife Conservation Commission produced *Florida Invaders*, an eight-page color brochure. The piece emphasizes the economic and ecological costs of invasives and touts the advantages of education, prevention, early detection, and rapid response. Readers are urged to be responsible pet owners and gardeners. The park has helped fund and staff Nonnative Pet Amnesty Days at Zoo Miami. Owners may bring unwanted exotic pets to the zoo on these days, no questions asked. The FFWCC lines up responsible adopters for these animals, and the event gives people an alternative to releasing them into the wild.⁷⁴⁹

⁷⁴⁸ Everglades CISMA website, <http://www.evergladescisma.org/about.cfm>; Ray W. "Skip" Snow, interview by author, Oct. 5, 2011.

⁷⁴⁹ Ray W. "Skip" Snow, interview by author, Oct. 5, 2011; NPS, *Florida Invaders*, <http://www.nps.gov/ever/naturescience/upload/2008%20Florida%20Invaders%20For%20Web.pdf>.

Mosquito Control

Mosquitoes present a severe challenge for humans attempting to live and work in the Everglades in the warmer months. Some thirteen of the forty-three mosquito species found in the Everglades bite humans. Mosquitoes carry diseases, such as West Nile disease and St. Louis encephalitis and can cause accidents when droves of them attack drivers or operators of power tools. Former residents of the fishing village of Flamingo told of their various attempts to keep the pests at bay. Some houses had a “losing room” where a smudge fire and palmetto fronds were used to shed the insects before one entered the house. Mothers wrapped their children’s limbs in newspaper before they ventured outdoors in summer. With the park’s establishment and the development of employee residences and maintenance facilities at Flamingo and Pine Island, the NPS faced the challenge of making these areas habitable with the least damage to the environment. The reality is that any chemical that is toxic to mosquitoes will adversely affect other creatures under some circumstances. On the other hand, as the park put it in 1961, “abatement or reduction of the mosquito nuisance [in developed areas] is recognized as essential to the welfare of visitors and employees.”⁷⁵⁰

The park has used a number of insecticides against mosquitoes through the decades (figure 14–10, mosquito fogging at Flamingo, June 1965). DDT (dichlorodiphenyltrichloroethane) was used at the park’s 1947 dedication and up through the early 1960s. In May 1961, the *Miami Herald* reported that mosquito fogging was done daily at Flamingo. Rachel Carson’s *Silent Spring* came out in 1962, touching off a campaign against DDT that led to its near total ban in the U.S. effective January 1, 1973. As of 1966, Everglades National Park had already switched to malathion for mosquito abatement. Malathion is an organophosphate insecticide known to be toxic to insects and some fishes and can cause altered behavior and loss of motor control in birds and reptiles. In 1970, Secretary of the Interior Walter Hickel instituted a system wide ban on the use of DDT and fifteen other pesticides. In the mid-1980s, the park was still employing malathion, but also experimenting with Scourge®, with active ingredients of resmethrin and piperonyl butoxide. By the late 2000s, the park was primarily using Anvil® 10+10 and Duet®. Both products contain d-phenothrin (trade name, Sumithrin®) and piperonyl butoxide as active ingredients. Resmethrin and sumithrin are synthetic pyrethroids, while piperonyl butoxide is a synergist, a chemical that enhances the effectiveness of other compounds. Duet® also contains prallethrin (trade name, ETOC®), which has the ability

⁷⁵⁰ Barbara L. Pettit, “A Short History of the Everglades and Surrounding Areas,” typescript draft, Apr. 1981, EVER 22965; Park Master Plan, Mission 66 Edition, 1961, HFC, box 3; Draft White Paper: Mosquito Control and Pesticide Use at Everglades National Park, n.d. [ca. Aug. 2007].

to draw mosquitoes from a resting state, thus increasing their exposure to the insecticide.⁷⁵¹



Figure 14–10, mosquito fogging at Flamingo, June 1965

Since 1980, mosquito control in NPS areas has been governed by the Integrated Pest Management (IPM) program as well as general NPS management policies. The management policies provide that native pests may be suppressed to “manage a human health hazard when advised to do so by the U. S. Public Health Service (which includes the Centers for Disease Control and the NPS public health program); or to otherwise protect against a significant threat to human safety.” Currently, Everglades and other NPS units make annual requests for the use of pesticides via an internet-based application called PUPS (Pesticide Use Proposal System). Depending on the requested use, park requests are approved by the regional or national IPM program manager. Since the implementation of the IPM program, Everglades has received authorization to use mosquito adulticides at the developed areas at Flamingo and Pine Island and at nonwilderness work sites for health and safety purposes. The areas actually treated each year varied depending on the severity of the mosquito presence. Thresholds for the use of pesticides were established based on the number of recorded mosquito landings per

⁷⁵¹ “Tourist Trade Slump Hits Everglades Park,” *Miami Herald*, May 12, 1961; Leslie D. Beadle, U.S. Public Health Service, Report of a Mosquito Survey at the Everglades National Park, Florida, Oct. 1966, EVER 22970; “News Briefs,” *National Parks Magazine*, Aug. 1970, 30; “Farewell, DDT,” *Miami Herald*, Dec. 31, 1972; National Resource Defense Council, <http://www.getipm.com/articles/malathion.htm>; Bayer Environmental Sciences, http://www.backedbybayer.com/system/product/product_label_pdf/59/SCOURGE-Insecticide-With-Resmethrin-Piperonyl-Butoxide-18-Plus-54-MF-Formula-II.pdf; SAR, 1985; “Synthetic Pyrethroids,” Beyond Pesticides, <http://www.beyondpesticides.org/pesticides/factsheets/Synthetic%20Pyrethroids.pdf>; material safety data sheets for Anvil® 10+10 and Duet®; Hillary Cooley, personal communication, Sept. 13, 2013.

minute (landing counts). When thresholds were exceeded, suppression measures were authorized. Pesticide application was generally made through ultra-low-volume spraying.⁷⁵²

Two developments in 2007 caused the park to review its mosquito control procedures. NPS staff required to live in the park had begun to purchase backpack sprayers and insecticides on their own to combat what they saw as an unbearable mosquito problem. These actions were not sanctioned through the IMP review process. In that same year, the North American Butterfly Association raised concerns over the effects of mosquito adulticides on rare butterflies in the park. Park managers concluded that its existing 1985 Mosquito Control Plan was no longer adequate. The park formed a Mosquito Interdisciplinary Team, which began work on a Mosquito Risk Reduction Plan in Everglades National Park Developed Areas. Through 2008 and 2009, the team worked to draft a new plan that would allow mosquito suppression when thresholds were exceeded. In summer 2008, ecologists Marc C. and Maria Minno observed butterflies before and after insecticide spraying at Flamingo. They observed neither mortality nor changed behavior in the butterflies, although they were not equipped to measure any sublethal effects on butterflies. Focus groups were also conducted with park employees to learn more about the physical and psychological effects of mosquitoes. Among other things, the Mosquito Interdisciplinary Team's recommendations called for incorporating adaptive management principles into the new plan; that is, adjustments would be made to spraying and other procedures as experience was gained. The team's recommendations were circulated in early 2010. To date, a new plan has not been adopted, largely because of the press of other business and lack of funding.⁷⁵³

⁷⁵² Jerry McCrea and Carol L. J. DiSalvo, "Integrated Pest Management: What Is It? What Has It Done for the National Park System?," in *Crossing Boundaries in Park Management: Proceedings of the 11th Conference on Research and Resource Management in Parks and on Public Lands*, ed. David Harmon (Hancock, MI: The George Wright Society, 2001), 393–98; Draft NPS Fact Sheet: Managing Pesticides, July 2007, <http://www.nps.gov/sustainability/documents/Waste/Pesticide-Management.pdf>; NPS Servicewide IPM Coordinator to IPM Program Files (draft), Feb. 8, 2010; *NPS Management Policies*, 2006, <http://www.nps.gov/policy/mp2006.pdf>; Hillary Cooley, personal communication, Sept. 13, 2013.

⁷⁵³ IPM Coordinator to IPM Program Files (draft), Feb. 8, 2010; Marc C. Minno and Maria Minno, "An Assessment of the Risk of Harm to Butterflies in the Flamingo Area of Everglades National Park Due to Mosquito Control Spraying around Staff Housing and Maintenance Facilities," July 5, 2008, "Everglades National Park Mosquito Risk Assessment Pilot: Results of Focus Group Interviews," Apr. 2010, National Resource Report NPS/BRMD/NRR—2010/189, ENP IPM files; Hillary Cooley, personal communication, Sept. 13, 2013.



**Wilderness on the Edge:
A History of Everglades National Park**

*Chapter 15:
Wildland Fire*

Chapter 15: Wildland Fire

When Everglades National Park was established in 1947, the long-standing NPS policy was to suppress all wildfires in parks, whether caused by lightning or human activity. The NPS was not alone in this; at the time, fire suppression was standard policy for all federal government land managers. NPS fire policies had been developed in the forests of the western states and for the most part echoed the policies of the U.S. Forest Service (USFS). Nonetheless, the geology and vegetation of South Florida, as well as the region's cultural attitudes and practices regarding fire, differed sharply from the western experience. Additionally, combating fires with traditional techniques exposed Everglades fire fighters to considerable hardship and danger because of the region's solution holes, exposed limestone rock, sawgrass, palmetto, muck, and insects. All of these factors produced a relationship with fire at Everglades National Park that was unique within the service. As a result, the park played a key role in the evolution of national wildland fire policies. Research done in the Everglades by park biologist Dr. Bill Robertson Jr. in the 1950s added much to the general understanding of the role of fire in ecosystems and led to the park's program of prescribed burning, the first such program in the NPS. The Everglades fire experience then helped to shape what historian Stephen J. Pyne has called fire's "cultural revolution" in the 1960s and thereafter. In this revolution, the idea that fires should be prevented whenever possible and always fought when they broke out gave way to an understanding that: 1) fire was a part of the natural order, 2) some fires should be allowed to burn, and 3) prescribed burns were often beneficial. In the 2000s, a growing belief that "natural" Everglades landscapes might well have been fire-maintained by humans for millennia began to influence fire policies.⁷⁵⁴

Early Park Approaches to Fire

In the late 1940s, NPS managers clearly understood that South Florida residents, Indian and white, had been using fire to manage landscapes since at least the nineteenth century. Only in later decades did scientists begin to understand that the routine use of fire by indigenous people around the world for a variety of purposes went back thousands of years. NPS managers were also quite aware of the damage done by human-caused fire to South Florida residential areas on the edges of the Everglades. They doubted, however, that lightning was a major cause of Everglades fires. This view was expressed by an NPS forester who wrote: "All fires are probably man-caused since lightning is normally accompanied by heavy rain." Superintendent Beard at first held this view and tended to be dismissive of local residents, including Ernest Coe, who argued that lightning caused fires. NPS managers understood that

⁷⁵⁴ Sellars, 126–27, 162–63, 253–57; Stephen J. Pyne, *America's Fires: A Historical Context for Policy and Practice* (Durham, NC: Forest History Society, 2010), 46–47. There are exceptions to this generalized picture. As early as the 1890s, geologist John Wesley Powell argued that Native American practices of burning understory helped to prevent large crown fires. See Pyne, 23.

Indians in Florida had long used fire in hunting and to discourage mosquitoes and other pests. They also knew that subsequent white and black settlers used fire for these ends and also to clear fields for planting, renew rangeland vegetation for livestock, and clear underbrush before an area was logged. By the middle of the twentieth century, many wildfires each year were accidentally set by the careless handling of cigarettes and cooking fires. Dry-season incendiary fires tended to be the most damaging to built-up areas and to Florida's image as a winter vacation paradise.⁷⁵⁵

The drainage work completed by the state in South Florida in the first decades of the twentieth century made fire a much bigger problem. Drainage lowered the water tables in the Everglades, prolonging the dry season and exposing muck and peat for longer periods. This caused the exposed soil to oxidize, making it more vulnerable to erosion and fire. Fires that might have burned out quickly in predrainage days tended to burn longer and cause more damage after drainage. The Everglades is a mosaic of differing natural environments, and fire has different effects in these various environments. Prior to drainage, fire was likely more common in pine uplands and sawgrass stands than on tree islands. Lowered water tables changed the effects of fire, especially in sawgrass marshes and coastal prairies. Before 1900, areas of sawgrass often would burn in the wet season, when the soil was inundated or heavily saturated. Under these conditions, the sawgrass regenerated rapidly. Following drainage, fires in sawgrass more frequently burned below the surface, destroying the stalks (known as culms) that normally would have sent out new growth. Fires in the dry season also burned the accumulated organic material (muck and peat) that formed the soil in the Everglades. Once ignited, muck fires could burn for months. Bill Robertson noted that between 1920 and 1954, extensive fires occurred in the Everglades in more than one-third of the winters. Fires were particularly troublesome in 1938, 1939, and 1945. In April 1939, news accounts told of "great clouds of smoke rolling into Miami" as more than a million acres burned. Everglades fires that sent smoke and ash east to the resort areas on the Atlantic Coast were especially worrisome to tourist-oriented South Florida.⁷⁵⁶

In the subtropical environment of the Everglades, the effects of fire or the absence of fire show up within a few years. Once they had gained some experience, Superintendent Beard and his staff concluded that what they had learned about fire elsewhere did not always apply in this new park. Following NPS policy and hoping to avoid a repeat of the catastrophic dry season fires of recent years, Everglades staff began with the idea that all fires should be suppressed. In 1948, the park entered into a cooperative agreement with

⁷⁵⁵ Asst. Chief Forester L. F. Cook to RDR1, Apr. 26, 1948, NARA Ph, RG 79., 79-58A-360, box 7; Dale L. Taylor, *Fire History and Fire Records for Everglades National Park, 1948-1979* (Homestead, FL: SFRC, 1981), 114-16.

⁷⁵⁶ McVoy, et al., 105-109, D86; "Tragedy in Florida," *Dallas News*, Apr. 23, 1939; William B. Robertson Jr., "Everglades Fires—Past, Present and Future," *Everglades Natural History* 2, no. 1 (1954), 15.

Dade County, which established an Everglades Fire Protection Zone. The zone extended twelve miles east of the eastern border of the park. The NPS staff pledged to help fight fires in this zone when requested, and Dade County agreed to help with fires within the park. The following year, 1949, the park adopted its first fire control plan, which ran to twenty-three pages and had a drawing by Superintendent Beard on its cover. In 1950, park staff had to fight three large fires simultaneously: Tamiami Fire No. 3, Long Pine Key Fire No. 3, and the Mowry Fire. These fires were fought day and night, mostly on foot, with very limited equipment that was difficult to move through the dense vegetation. Airplanes were used only to scout fires and map their extent. In May 1950, Superintendent Beard met with his ranger and fire protection staff for a critique of the fire season; the fire critique became an annual event. The park also instituted annual fire training sessions, which the NPS regional forester often attended. In these early years, park staff worked heroically under extremely difficult conditions to fight fires. Beard wrote of this period of fire control, “every time we used to have a fire the chief clerk, superintendent, and fiscal accounting clerk grabbed their old pants . . . and ran out to work on it” (figure 15–1, Supt. Beard’s take on firefighting). Given the huge effort required and the dangers to firefighters, Beard and others came to question the wisdom of suppressing every fire. They also noted that the tracks left by firefighting equipment, such as bulldozers and mobile pumper tanks, often left scars that lasted far longer than any visible effects of the fire itself.⁷⁵⁷

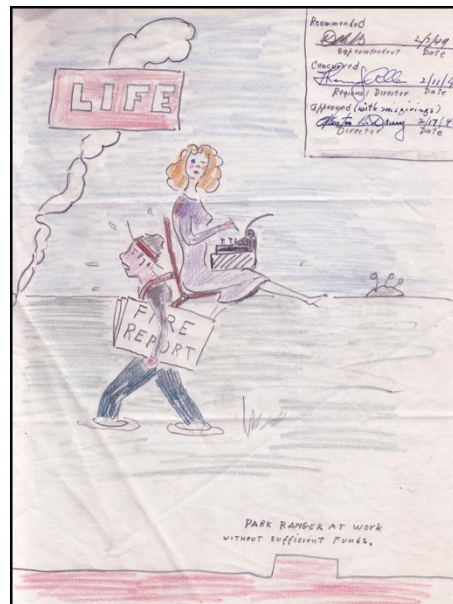


Figure 15–1, Supt. Beard’s take on firefighting

⁷⁵⁷ Fire Control Plan, Everglades National Park, Feb. 1949, NARA II, RG 79, NPS CCF, box 924; Taylor, *Fire History*, 6, 17; Everglades National Park Fire Critique, May 16, 1950; Supt. Beard to RDR1, Dec. 8, 1955, NARA II, RG 79, NPS AF, box 1384; Supt. Beard to C. Ray Vinten, Jan. 15, 1953, EVER 22965.

Beard and his staff were also learning more about the role of fire in Everglades environments. During the 1950–1951 season, two fire observation towers were erected, one on Long Pine Key near present-day Research Road and the other near the end of the Shark Valley Road (at that time, commonly known as the Seven-Mile Road) running off Tamiami Trail.⁷⁵⁸ Once the towers were in use, park staff made an interesting observation: they saw that lightning did indeed cause a number of fires. Most were quickly put out by rain or high humidity, but a few turned into large blazes. Park staff also began to understand that fire played a key role in maintaining the forest communities, dominated by stands of slash pine (*Pinus elliotti* var. *densa*), on uplands like Long Pine Key. Without periodic fires in the pine uplands, hardwood species came to dominate and soon shaded out the typical understory of a pine forest. Park staff began to consider that they might have to deliberately start fires to replicate what natural fire once had achieved. Nothing in the record indicates that park managers in this period considered the possibility that Native Americans deliberately burned pine upland areas to facilitate hunting or encourage the growth of useful plants, such as the coontie. As early as March 1949, Beard observed: “I do believe that, after about a decade of protection down here, we shall come to the conclusion that controlled burning in certain vegetative types will be in accordance with policy and good sense.”⁷⁵⁹

Bill Robertson began to learn about the Everglades ecosystem in 1948 as he did field work for his PhD dissertation on the breeding bird populations of South Florida. In 1951 and 1952, he took a seasonal position as a fire control aide at Everglades National Park. Robertson investigated the role of fire and produced a 1953 study, “A Survey of the Effects of Fire in Everglades National Park.” The key finding of this study was that Florida’s rockland pine forests were a subclimax vegetational community. If these forests did not regularly burn, hardwood forest communities would replace them. Robertson wrote: “Almost all of the endemic pinewoods species are shaded out by invading hardwoods in pine forest areas that are free of fire for as little as five years.”⁷⁶⁰ The unavoidable conclusion was that the NPS would have to tolerate or introduce fire in pine uplands if this rare forest community, which was rapidly disappearing outside the park, was to survive.

The park’s 1956 fire control plan reflected the first eight years of experience with Everglades fire. The basic policy was that “all fires inside or threatening the park shall be suppressed.” The only exceptions were fires in the coastal mangrove zone and most fires in hardwood hammocks. Fires in the mangrove belt, usually touched off by lightning,

⁷⁵⁸ The Seven-Mile Road fire tower was removed in Sept. 1964, following the completion of the Shark Valley observation tower/fire lookout. SMR, Sept. 1964.

⁷⁵⁹ Supt. Beard to RDR1, Mar. 29, 1949, NARA Ph, RG 79, 79–58A-360, box 7; Daniel B. Beard, “Let ‘er Burn?,” *Everglades Natural History* 2, no. 1 (1954), 6–7.

⁷⁶⁰ Beard, “Let ‘er Burn?,” 6–7; Robertson, “Everglades Fires,” 13.

typically burned out quickly and were difficult to detect and fight. Park policy was to let them burn unless they threatened to move into prairie or marsh areas.⁷⁶¹ Rather than fight fires on hammocks, park staff attempted to protect threatened hammocks by creating fire breaks around them so that wildfires would bypass them. The plan called for the two fire lookout towers to be operated from 9:30 am to 6:00 pm from November 1 through June 30. Pineland fires were to be combated using backfiring from roads or bulldozed firelines. Glades fires were to be addressed by spraying water at the head or hot flank, with swatters beating down embers. Bulldozers were not to be used on glades fires unless there was no other feasible means of fire control. The park maintained its cooperative agreement with Dade County, calling for mutual response to fires within the Everglades Fire Protection Zone. Additionally, the plan delineated the responsibilities of park staff for training, presuppression, equipment maintenance, and response.⁷⁶²

The First Prescribed Fire

As of the middle 1950s, deliberate burning to maintain a vegetative community, such as the Everglades pinelands, was strictly against NPS policy. With an increased understanding of the role of fire in pine uplands, Superintendent Beard went to work to get permission for an exception for Everglades National Park. Relying on Bill Robertson's work, in July 1956, he wrote the regional director about the consequences of completely suppressing fire in the pine uplands. Late in the year, he renewed his argument in a two-page memo to the regional director. Beard pointed out that:

the invasion of pine by hardwoods is more rapid than supposed It seems evident that the advance of hardwood succession will ultimately result in the extinction of South Florida slash pine and . . . in the loss to the park of many land birds and other animals found only in the pine forest habitat.

He closed this memo by asking for immediate consideration of an exception to NPS policy. Regional Director Elbert Cox and the regional forester supported Beard's request and passed it on to Director Conrad Wirth. Wirth consulted with the heads of major conservation groups, including the Nature Conservancy. A month later the NPS director approved this "radical departure from the long-established and effective fire control policy of the service." He stipulated though that he personally would need to approve the burn plan and that burning should be limited to the smallest area of the park that would ensure the maintenance of "a representative sample of this pine type." The NPS was moving away from its longstanding policy in this instance, but very cautiously. Without

⁷⁶¹ Everglades superintendents seem never to have sought official sanction for this deviation from NPS policy; it was in the nature of a "house rule." Supt. Beard to RDR1, July 16, 1956, EFR.

⁷⁶² Everglades National Park Fire Control Plan, May 1956, EFR.

Beard's persistence and NPS management's respect for his knowledge of local conditions, this deviation from long-standing policy likely would not have occurred.⁷⁶³

In June 1957, Bill Robertson prepared a management plan for this first prescribed burning program, which Director Wirth approved in October. Under the plan, pine upland areas (Long Pine Key, Pine Island, and Parachute Key) were divided into study blocks, denominated Blocks A through K. Blocks A through J were on Long Pine Key. Block K, which originally comprised all the other upland areas, later was subdivided into Blocks K through Z. The plan called for doing burns from December through March. The timing was based more on the availability of winter seasonal employees than any effort to mimic the timing of natural fires. Summer (wet season) fires caused by lightning were to be allowed to burn in the uplands, but they were to be monitored. During 1957, park staff blazed twenty miles of rough-graded fire roads on Long Pine Key to separate the study blocks. On April 21, 1958, park staff conducted a controlled burn of Block B, about 1,500 acres, on Long Pine Key (figure 15–2, setting the first prescribed burn). This represented the first time that the NPS had conducted a prescribed burn as part of a long-term plan that included monitoring of results.⁷⁶⁴ The *Miami News* explained that “a good fire is occasionally the best friend of the slash pine.” In subsequent years, all of the remaining study blocks were burned pursuant to a schedule. Robertson and ranger staff documented conditions in the study blocks before and after the burns from 1958 through 1965. After 1965, the burns continued but with less rigorous data collection.⁷⁶⁵



Figure 15–2, setting the first prescribed burn

⁷⁶³ Supt. Beard to RDR1, Nov. 14, 1956, Dir. to RDR1, Dec. 18, 1956, NARA II, RG 79, NPS AF, box 1384; Taylor, *Fire History*, 15–16; George B. Fell, Exec. Dir., The Nature Conservancy, Nov. 19, 1957, EFR. Biologist and NPS collaborator Frank C. Craighead also supported the idea of prescribed burning in the pinelands. Frank C. Craighead to RDR1, no date [July 1956?], EVER 42242.

⁷⁶⁴ Sequoia National Park Supt. John White did some limited controlled burning on his own authority in the 1920s, and Pipestone National Monument Supt. Lyle K. Linch in 1950 did a controlled grasslands burn. Neither had approval from the Washington NPS office. Hal K. Rothman, *Blazing Heritage: A History of Wildfire in the National Parks* (New York: Oxford University Press, 2007), 42, 86–87.

⁷⁶⁵ Supt. Allin to RDSE, Apr. 15, 1968, WRNC, NPS, 79–68–8, box 12; SMR, Apr. 1958; Taylor, *Fire History*, 14–16; “Park Rangers Set Helpful Fire, *Miami News*, Apr. 21, 1958.

The new policy applied only to the park's pine uplands; suppression of other fires remained official Everglades National Park policy through 1972. In November 1965, the park burned all of Pine Island to reduce the large amount of fuel produced by Hurricane Betsy. Between 1969 and 1972, the park began to extend its controlled burning program beyond pineland areas to all areas of the park that were fire-dependent, potentially embracing approximately 438,000 acres. Park staff burned thirty experimental plots in the Shark Slough and studied the results. Sawgrass stands that remain unburned for long periods become ecologically degraded and produced large fuel loads that contributed to making unplanned fires larger and more dangerous. Park staff concluded that controlled burns succeeded in reducing dead sawgrass fuel loads and promoting new growth. Over time, controlled burns also began to be used in an attempt to control or eliminate exotic vegetation. The burning of thick stands of Australian pine, where herbicides were ineffective, began in 1971. Still, pine uplands remained the overwhelming focus of the prescribed burning.⁷⁶⁶

One of the most serious fires in the park's history, the Shark Valley Fire, raged from May 15 to June 20, 1962. This incendiary fire began just south of the Tamiami Trail, nine miles east of the park but within the fire protection zone where the park and Dade County had mutual responsibilities. Park staff immediately joined Dade County firefighters in an effort to keep the fire out of the park. By the end of the second day, however, an arm of the fire had crossed the park boundary. On the fourth day, brisk winds spread the fire some sixteen miles down Shark Valley, and the park requested outside assistance. Personnel from Homestead Air Force Base and the Navy were in the ranks of firefighters by the fifth day. Several days later, the service also hired Seminoles as firefighters. The Coast Guard and later the Navy supplied a helicopter which proved extremely useful in transporting people and equipment. Ranger-Pilot Ralph Miele made many overflights to monitor the fire's progress. With these added resources, the park was able to keep the fire from reaching the main park road. On May 24 a second fire that had begun in the Big Cypress Swamp merged with the Shark Valley Fire. At this point, a B-26 tanker plane and Stearman crop-duster planes were used to drop water on the fire, the first use of aerial water drops by Everglades National Park. The Shark Valley Fire was declared under control on June 5 and officially out on June 20. By that time, it had burned 77,664 acres within the park and 106,880 outside of it.⁷⁶⁷

Park managers gleaned several valuable lessons in combating the Shark Valley Fire and others in the 1960s. The use of helicopters proved significantly more effective than

⁷⁶⁶ R. W. Klukas, "Control Burn Activities in Everglades National Park," paper presented at 12th Annual Tall Timbers Fire Ecology Conference (Tallahassee: Tall Timbers Research, 1973); Harold W. Warner, "The Effects of Fire on Sawgrass in Shark Slough," Mar. 1975, EFR; SMR, Nov. 1965; Thomas Richard Anderson, interview by author, Sept. 26, 2013.

⁷⁶⁷ Narrative—Shark Valley Fire, July 1962; Chief Park Ranger to Supt., July 20, 1962, EFR; Ralph Miele, interview by author, June 13, 2012.

glades buggies in fighting a fast-moving fire over difficult terrain. Park staff agreed that “helicopters should be used whenever possible on all future fires other than the small ones.” Managers judged the aerial dropping of water a partial success and looked to experiment with water bombing in the future, with the addition of fire retardants to the water. Radio communication among fire crews and between crews and pilots was often lost during the fire and recognized as an area that needed improvement. After a fire in 1969, park management decided to discontinue fighting fires at night for safety reasons. Managers were also increasingly reluctant to expose staff to the dangers of directly attacking glades fires, and the use of backfiring or spot ignition to deprive fires of fuel became more common.⁷⁶⁸

Fire Management Replaces Fire Control

In the early 1970s, the park contracted with Ronald H. Hofstetter of the University of Miami to undertake a study of fire and fire management in the park. Hofstetter’s 1975 report, *Effects of Fire in the Ecosystem*, looked at the effects of fire on sawgrass glades and wet prairies as well as pine uplands. The report included a number of recommendations:

1. establishing the areas within the park where fires would be allowed to burn and other areas where they would be suppressed;
2. systematically tracking water levels, soil moisture, and fuel loads;
3. burning pine areas on a three- to seven-year schedule;
4. burning glades areas on a ten-year schedule;
5. using spot ignition for management burns, rather than line ignition, to mimic lightning ignition;
6. conducting prescribed burns in the wet season or early in the dry season, when most natural fires occur;
7. establishing a dedicated prescribed-burn team in the park; and
8. educating the public about fire ecology and prescribed burning.⁷⁶⁹

Attitudes nationwide toward fire prevention and fire suppression were changing in the 1960s and 1970s as the environmental movement began to take hold in the U.S. The 1963 Leopold Report recommended that the NPS change its fire policies. The report specifically cited the Everglades experience with controlled burning as a positive example of more ecologically attuned resource management. It recommended that the

⁷⁶⁸ Narrative—Shark Valley Fire, July 1962; Chief Park Ranger to Supt., July 20, 1962, EFR; Taylor, *Fire History*, 6.

⁷⁶⁹ Ronald H. Hofstetter, *Effects of Fire in the Ecosystem: An Ecological Study of the Effects of Fire on the Wet Prairie, Sawgrass Glades, and Pineland Communities of South Florida, Final Report*, EVER-N-48, USDI National Park Service, NTIS no. PB 231940, June 1975.

service make greater use of controlled fire, which it described as “the most ‘natural’ and much the cheapest and easiest” method of manipulating vegetation (see Chapter 11 for details on the Leopold Report). The experience gained at Everglades National Park, fire research being conducted at Sequoia National Park, and the work of Florida’s Tall Timbers Research Station all influenced the evolution of NPS attitudes.⁷⁷⁰ Beginning in the 1960s, the service began to revise its fire policies. The 1968 version of the agency’s management policies for the first time recognized fire as a natural ecological factor. The policies announced that some naturally occurring fires could be allowed to burn and prescribed burns could take place. Naturally occurring fires that were allowed to burn became known as prescribed natural burns. Fires set by staff were known as prescribed management burns. Fires not meeting park management’s goals would continue to be suppressed. This new policy gave the NPS a leading position on fire management and allowed superintendents considerably more scope to craft fire policy in line with local conditions. Everglades National Park’s fire *control* plan became a fire *management* plan in 1973, reflecting this change in attitude.⁷⁷¹

The 1973 Everglades National Park Fire Management Plan (FMP) reflected the cultural revolution in dealing with fire. The document stated:

The objective of the [fire management] program is to manage fire as one of the environmental factors, along with water, so as to let natural processes perpetuate the natural ecosystems of Everglades National Park by allowing lightning and man-caused fires to burn under a prescription in designated fire management units and by prescribed burning.

Each fire not deliberately set by the park would be evaluated, with one of three responses—suppression, containment, or observation—chosen based on the conditions that prevailed. Three fire management units (FMUs) were established within the park: mangrove/coastal glade (328,000 acres), Everglades prairie (356,811 acres), and pineland (13,000 acres). The boundaries of the FMUs were established based on management objectives, different response objectives, and defensible borders. The zones, subject to minor boundary changes, remain in effect at this writing. The most significant change has been in the boundary of FMU 3, which formerly had an irregular boundary, but has now been simplified to embrace the territory between the main park road and the route of Ingraham Highway. The 1973 plan also recognized the Everglades Protection Zone, corresponding to the twelve-mile mutual protection zone established in earlier

⁷⁷⁰ Established in Tallahassee in 1958, the Tall Timbers Research Station began a series of fire ecology conferences in 1962 that fostered the exchange of ideas and best practices among biologists and resource managers. Stephen J. Pyne, *Fire in America: A Cultural History of Wildland and Rural Fire* (Seattle: University of Washington Press, 1997), 159.

⁷⁷¹ A. Starker Leopold, *Wildlife Management in the National Parks* (Washington, DC: NPS, March 1963), www.cr.nps.gov/history/online_books/leopold/leopold2.htm; Sellars, 254–57; Pyne, *Fire in America*, 303.

agreements with Dade County. The Everglades Protection Zone became the responsibility of the Florida Division of Forestry in 1975. Following the East Everglades expansion of the park authorized in 1989 legislation, the approximately 109,000 acres added to the park became a new FMU, FMU 4.⁷⁷²

As articulated in the 1973 plan, the fire management strategy for each of the three FMUs was essentially to allow fires to burn. For the coastal zone, no action was anticipated when fire broke out. In the prairie zone, lightning fires would be monitored, and human-caused fires would be fought only if soil moisture conditions were unfavorable and only with indirect methods (i.e., backfiring). In the pineland zones, fires would be allowed to burn to the limits of the controlled-burn block where they started. If the fire needed to be contained, indirect methods would be used. The park's management biologist was given the authority to decide when a fire in Zone 2 or 3 would be contained. Strict limits were placed on the use of tracked vehicles to contain fires. The plan provided that research into fire behavior and fire ignition techniques was to continue. The plan would be kept current through a yearly review by the management biologist and district rangers.⁷⁷³

The 1973 FMP contained a Prescribed Burning Plan for 1974 through 1979. It stated the goals of prescribed burning in the park as:

1. reducing fuel loads, especially along the park boundary, to minimize chances of catastrophic fire;
2. perpetuating a mosaic of subclimax vegetational communities;
3. controlling Australian pine where feasible; and
4. restoring agricultural land in the Hole-in-the-Donut.

The plan included a schedule indicating which pineland blocks were to be burned from 1974 through 1979. In spite of Hofstetter's recommendation about burning in the wet season, the plan restricted controlled burns in pineland to October through January. The stated reason was a fear of disrupting wildlife reproduction, but the availability of seasonals in the winter probably played a role. This prohibition on wet season burning was dropped in the 1976 plan. Burns were also to be conducted so as to cause minimal inconvenience to visitors.⁷⁷⁴

⁷⁷² Larry Bancroft, "Fire Management in Everglades National Park," Aug. 1974, EVER-01385; Everglades National Park Fire Management Plan, Oct. 1973; Draft Everglades National Park Fire Management Plan, Sept. 2011, EFR.

⁷⁷³ Everglades National Park Fire Management Plan, Oct. 1973, EFR.

⁷⁷⁴ Everglades National Park Fire Management Plan, Oct. 1973, EFR. Dir. George Hartzog was especially sensitive to the effect of smoke on VIP visitors to the park. Nathaniel Reed tells of hearing from park rangers that Hartzog strictly forbade burning in the winter and spring when VIPs were in the park. Reed called up Hartzog and suggested that he have the most attractive female park employees greet VIP visitors and explain to them the ecological benefits of controlled burning. It was not long before Reed was hearing

An October 1974 Conference on Wildfire Management in South Florida and several follow-up meetings led to the creation of the South Florida Interagency Fire Management Council. The group was organized to provide a framework for interagency cooperation, information sharing, the promotion of appropriate fire management practices, and increasing public understanding. The council is made up of federal, state, and local governmental agencies from the tip of the Florida peninsula up through Charlotte, Glades, and Martin Counties. This has evolved into the South Florida Fire Planning Unit, which was organized pursuant to the National Fire Plan. Council members are the National Park Service, Bureau of Indian Affairs, Florida Park Service, Florida Department of Forestry, the South Florida Water Management District, and the Florida Fish and Wildlife Conservation Commission. At this writing, the council meets four times a year.

After the 1976 establishment of the South Florida Research Center, the park hired a fire ecologist, Dale L. Taylor. Taylor prepared a number of studies on the history and ecological effects of fire in the Everglades. Much of the fire-related work done by the SFRC and outside scientists in the 1970s focused on the seasonality of fire. Taylor's *Fire History and Fire Records for Everglades National Park, 1948–1979* (April 1981) contained a detailed analysis of the first three decades of fire in the park. Taylor also established a centralized repository of fire data in the park, which continues to be maintained. This fire data was digitized in the 1990s and placed in a GIS system that provides a comprehensive history of fires since establishment as well as the acreage burned in each fire. Taylor's work reinforced the idea that prescribed burning in the wet season most closely matched natural conditions.⁷⁷⁵

Scientists in the 1970s seemed to realize that humans had used fire in the area for thousands of years—presumably in the winter dry season as well as the summer. They were committed, however, to the idea of replicating the effects of lightning ignition. From the late 1970s into the early 2000s, the park burned largely in the wet season. By the late 1980s, a major emphasis of the park's fire team was to reduce fuel loads along the northern and eastern park boundary. The goals were to keep fires inside the park so they would not spread to built-up areas and to keep fires ignited outside the park from entering it. When Dale Taylor took a position with the Bureau of Land Management in Alaska in 1981 or 1982, the fire ecologist position remained vacant until 1999. SFRC scientist Robert F. Doren did some work related to fire and briefly held the position of fire management officer. During the 1980s, Sue Husari, trained as a biologist, was assistant fire management officer, then fire management officer

praise from Congressmen about the “great things” being done with fire in Everglades National Park. Nathaniel Reed, interview by author, May 22, 2012.

⁷⁷⁵ Dale L. Taylor, “Fire Records: Their Importance and Use in Documenting Fire History,” EVER 42242; Jackson Weir, personal communication, July 19, 2012; Robert Panko, interview with Nancy Russell and Siobhan Millar, June 2, 2009; Thomas Richard Anderson, interview by author, Sept. 26, 2013.

and brought that perspective to the fire program. Through the early 1980s, the majority of controlled burns done within the National Park System were done in Everglades National Park and Big Cypress National Preserve. Over time it became apparent that ignition of prescribed burns using a helicopter was safer and more efficient than ground ignition. Park staff worked with USFS staff to develop an aerial igniter specifically adapted to South Florida conditions.⁷⁷⁶

The NPS produced its first separate statement of fire policy in 1978, with the release of *Director's Order 18: Fire Management Guideline (DO-18)*. Fires that burned nearly one million acres in Yellowstone National Park in 1988 had lasting effects on NPS wildland fire policies. The service drew much negative, often ill-informed, press coverage because a few of the Yellowstone fires were prescribed burns that escaped containment. The public failed to understand that the majority of the damage resulted from lightning and accidental ignitions outside the park. In response, the NPS directed parks to temporarily suppress all fires while it reviewed its policies. The Departments of Interior and Agriculture produced a review report in 1989, which led to a 1990 revision of *DO-18*, titled *Wildland Fire Management Policy*. A second dual-agency review occurred in 1995. The 1998 revision of *DO-18* embraced the conclusions the 1995 review. NPS fire policies in this period moved toward requiring significantly more planning and monitoring of both prescribed natural fires and prescribed management fires. Each new park FMP now had to be supported by an environmental assessment. Additionally, park FMPs were to include a fuels management analysis and plan, and all prescribed management fires were to include monitoring programs to evaluate fire behavior, fire effects, and whether fire objectives were met. NPS policies for prescribed fire were revisited following the May 2000 Cerro Grande fire in Bandelier National Monument.⁷⁷⁷ With lessons learned from that and other fires, the NPS in 2003 issued a *Fire Monitoring Handbook*, which provided guidance on implementing fire monitoring standards. An important emphasis in the 1998 and 2003 documents was the need for objective-dependent monitoring—monitoring that gave some idea of whether the articulated goals of prescribed burning were being achieved.⁷⁷⁸

⁷⁷⁶ Dale Wade, John Ewel, and Ronald Hofstetter, *Fire in South Florida Ecosystems, Technical Report SE-17* (USFS Southeastern Forest Experiment Station, 1980), 37; Thomas Richard Anderson, interview by author, Sept. 26, 2013; Robert Panko, interview with Nancy Russell and Siobhan Millar, June 2, 2009; “Federal Review of Fire Policy Constrains Everglades Burns,” *Miami Herald*, Nov. 6, 1988.

⁷⁷⁷ The Cerro Grande fire was a prescribed fire that escaped containment and burned 48,000 acres and destroyed hundreds of homes in Los Alamos, New Mexico. In the wake of this fire, plans for prescribed burns in Everglades and throughout the NPS are peer reviewed and resources are positioned to better cope with unforeseen fire contingencies. Barry T. Hill, *Fire Management: Lessons Learned from the Cerro Grande (Los Alamos) Fire* (Washington, DC: Government Accounting Office, July 2000).

⁷⁷⁸ Bruce M. Kilgore, “Origin and History of Wildland Fire Use in the U.S. National Park System,” *George Wright Forum* 24/3 (2007):112–13; USDA and DOI, *Final Report of the Fire Management Policy Review Team* (Washington, DC: USDA and USDI, 1989); USDA and DOI, *Final Report: Federal Wildland Fire Management Policy and Program Review* (Washington, DC: USDA and DOI, Dec. 18, 1995); NPS, *Director's Order 18: Wildland Fire Management Policy* (Washington, DC: NPS, 1990, 1995); NPS, *Fire Monitoring Handbook* (Boise: National Interagency Fire Center, 2003).

Everglades National Park continued its role as a leader in NPS fire management policy under fire management officers Robert Panko (1996–2007) and Richard “Rick” Anderson (2008 to present writing). Panko implemented national policy on fire monitoring and hired the first two fire monitors in the park. Funding for a fire ecologist position became available and was filled by Jeff Kitchens (2001–2003) and Rick Anderson (2004–2008). Panko and Anderson worked to increase the efficiency and usefulness of monitoring, reworking national guidelines to better fit the unique conditions and challenges of the Everglades, and monitoring the effects of fire on specific ecosystem components. Inventory and monitoring of fire plots has been modified and streamlined. Staff increasingly has relied on precise photo monitoring, which limits the time staff has to spend on the ground in difficult conditions. Some of the guidelines in the Fire Monitoring Handbook are applicable primarily to western forests. While fallen limbs and sticks are important portions of the fuel load in many western areas, grass and palmetto are the primary fuels in the Everglades. Consequently, the park has ceased calculating the number and mass of fallen sticks in wetlands.⁷⁷⁹

As described in Chapter 12, the park provides habitat for a number of threatened and endangered species. The park’s FMP includes measures to protect these species, and planning and monitoring for management fires takes them into account. Many of the park’s endangered plants are found on hardwood hammocks, and the fire plan stipulates that sensitive hammocks will be protected from naturally occurring fires and excluded from prescribed burns. The endangered Cape Sable seaside sparrow is found only within Everglades National Park, in several subpopulations. Soon after becoming fire management officer, Robert Panko convened a three-day symposium bringing together sparrow experts and fire managers. This has become an annual event at the beginning of the wet season, when a fire strategy is worked out. Among other things, managers take care not to burn large proportions of sparrow habitat at one time and also work to reduce hazard fuel concentrations in or surrounding sparrow habitat. Recently, the endangered Bartram’s scrub-hairstreak and Florida leafwing butterflies have become a management concern. The pinelands croton is the sole larval host for the former species. Reports by scientists in the 1910s and 1920s indicate that croton was considerably more abundant in that period. Planning for prescribed burns in the pinelands now takes into account the life cycle and health of this host species, and its regrowth and resprouting after fires are noted.⁷⁸⁰

⁷⁷⁹ Robert Panko, interview with Nancy Russell and Siobhan Millar, June 2, 2009; Thomas Richard Anderson, interview by author, Sept. 26, 2013.

⁷⁸⁰ 1993 Fire Management Plan, 2011 Draft Fire Management Plan, EFR; Robert Panko, interview with Nancy Russell and Siobhan Millar, June 2, 2009.

The Miccosukee Tribe of Indians in Florida understandably has concerns about prescribed burning in nearby park areas. The tribe has its own fire management program and participates in the South Florida Interagency Fire Management Council. In the first decades of the park's prescribed burning program, the park was reluctant to burn areas where there was a risk of smoke or fire reaching tribal residential areas along the Tamiami Trail. Now that most tribal houses are on substantial concrete pads, the fire risk has diminished. It is important to reduce fuel loads in areas close to the reserved area, and the park coordinates its burning with the tribe. Park fire managers in recent years have worked to accommodate the tribe's objectives in planning burns.⁷⁸¹

The park's fire management program is hampered in that it is currently operating under an outdated 1995 FMP. Staff has been working on a new edition of the plan, including an environmental assessment (EA), since the early 2000s. The reasons for the delay in getting a new plan approved are many including staff turnover, budget cuts, and many concurrent projects. Without a current, approved plan and EA, prescribed fire treatments are limited to two types of fires that are currently authorized under National Environmental Policy Act Categorical Exclusions (CEs): treatments to reduce hazardous fuel build-up and treatments to manage exotic plants. Exotic vegetation treatments can occur in wilderness and nonwilderness areas. Hazardous fuel reduction treatments are limited to areas outside of designated wilderness and a maximum of 4,500 acres annually until completion of a new FMP EA, or until April 2015 when hazardous fuel reduction fires will no longer be allowed under a CE. Because most of the park (1.3 million acres) is designated wilderness, this is a serious limitation.⁷⁸²

Fire managers protect Everglades wilderness values by applying minimum tools analysis to all planned activities in wilderness and the use of minimal impact suppression tactics for unplanned activities. Essentially this involves selecting the practice, tool, or equipment that has the least adverse impact on wilderness values. Fire managers also maintain a list of park historic structures and archeological sites and take care not to use ground-disturbing suppression methods where archeological resources are believed to exist. The park can burn more often in the pinelands of the 230-acre Boy Scout camp because it is privately owned. This allows crews to refine ignition techniques and also compare the results of different fire return intervals as shown in figure 15-3 (different fire return intervals in pineland: seven–eight years on left, two–three on right).⁷⁸³

⁷⁸¹ Richard Anderson, personal communication, Nov. 8, 2013.

⁷⁸² Thomas Richard Anderson, interview by author, Sept. 26, 2013; Brien Culhane, personal communication, Nov. 5, 2014

⁷⁸³ Thomas Richard Anderson, interview by author, Sept. 26, 2013; Brien Culhane, personal communication, Nov. 5, 2014.



Figure 15-3 (different fire return intervals in pineland: seven–eight years on left, two-three on right)

The NPS released the updated FMP EA for public, agency, and tribal comment in October 2014. The new FMP includes a multiyear fuels treatment plan that calls for prescribed fires to be planned and implemented on a multiyear rotation of fuels treatments. Prescribed fires would take place in wilderness and nonwilderness areas, including large areas where it is currently restricted. Prescribed fire treatments would be prioritized annually based on public safety and ecological goals. The new FMP supports NPS goals to restore fire's natural role in the ecosystem. Agency consultation is expected to be completed and a signed NEPA decision document for the FMP is expected to be in place sometime in 2015.⁷⁸⁴

Since 2004, the fire team has put together a map detailing the dates of last burning throughout the park, known as a fire return interval departure map. Analysis of the map has revealed that some areas in the park have remained unburned for decades. The park's prescribed burning program began in the pinelands and that plant community has traditionally received the lion's share of planned burning. A priority in the draft FMP is to conduct more burns in marshes and coastal prairies. More burns are now being conducted in the winter dry season as well. The park constitutes only a portion of the historical Everglades, and lightning ignitions in the park are few. Historically, many fires likely began outside the current park boundary and burned into what is now the park. This no longer occurs because fire suppression is the rule outside of the park. If park staff conducted prescribed fire only in the wet season, they could not burn sufficient acreage to maintain what historically seems to have been an extensively fire-maintained landscape.⁷⁸⁵

⁷⁸⁴ Brien Culhane, personal communication, Nov. 5, 2014.

⁷⁸⁵ Thomas Richard Anderson, interview by author, Sept. 26, 2013.

The basic philosophy behind the park's fire management policies remains that fire is a natural process in the Everglades. Stated park fire management objectives are:

1. safeguarding the park's natural and cultural resources from the negative effects of fire and fire management activities;
2. maintaining and restoring a healthy and sustainable ecosystem through science-based fire management;
3. managing fires through monitoring and limiting fire suppression to the minimum needed to achieve resource benefits and public safety; and
4. using prescribed burns to maintain fire-dependent ecosystems, reduce hazard fuel loads, control exotic vegetation, and minimize the danger of fires entering or leaving the park.⁷⁸⁶

Park managers apply adaptive management principles to fire management. The operations of the fire management program are systematically monitored in a search for improvements and refinements that can be made. As of this writing, the program has twenty-eight full-time staff and between ten and twelve seasonal and subject-to-furlough positions. The park's four fire management units remain:

- FMU 1, Coastal Prairie: Approximately 400,000 acres. About 97,000 acres of fire-dependent prairie, with the rest mangrove forest and Florida Bay;
- FMU 2, River of Grass. About 405,000 acres, of which 326,000 acres are fire-dependent;
- FMU 3, Pinelands. Approximately 55,000 acres, with 47,000 acres fire-dependent; and
- FMU 4, East Everglades. About 109,000 acres, of which 102,000 acres are fire-dependent (figure 15-4, fire management units).⁷⁸⁷

Everglades National Park's fire management activities are closely coordinated with other federal, state, and local agencies that have land management responsibilities in South Florida. The NPS, U.S. Fish and Wildlife Service (USFWS) and Florida Forest Service (FFS) have a state-wide cooperative agreement pertaining to the management of wildland fires. Under the aegis of this agreement, a South Florida Annual Operating Plan is established among the NPS, the Fish & Wildlife Service, the Everglades District of the FFS, BIA, and the Seminole Tribe of Florida. The annual operating plan establishes a Mutual Response Zone along the eastern boundary of the park that enables all agencies involved to take initial attack actions. The Mutual Response Zone is now limited to the area between the park's east boundary and Canals 31 and C-131.⁷⁸⁸

⁷⁸⁶ 2011 Draft Fire Management Plan, EFR.

⁷⁸⁷ 2011 Draft Fire Management Plan, EFR; Jennifer Adams, personal communication, July 19, 2012.

⁷⁸⁸ 2011 Draft Fire Management Plan, EFR; Jack Weer, personal communication, July 19, 2012.

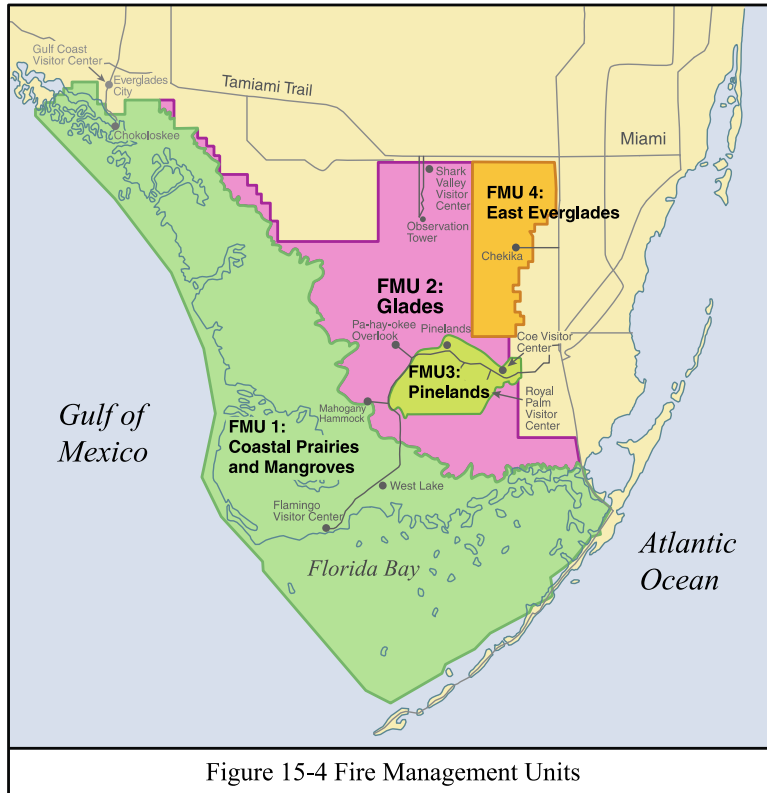


Figure 15-4 Fire Management Units

Fire Cache

A fire cache is a strategically placed supply of fire tools and equipment assembled in advance and maintained for use in fire management only. The park's first cache was in three bays of the CCC-era garage at Royal Palm Hammock. By the late 1950s, the fire cache had moved to the Pine Island maintenance area. In 1984, the fire cache moved to the Daniel Beard Center. When the SFNRC moved from the old Iori bunkhouse in the late 1980s, the park's fire team moved into the building and the fire cache was located in the nearby garage building.⁷⁸⁹

⁷⁸⁹ Form 10-768, Royal Palm Ranger Garage, Sept. 9, 1949, EVER 22965; ENP Fire Control Plan, Mar. 1966, EFR; Jennifer Adams, personal communication, July 19, 2012; SAR, 1984.

Major Park Fires since 1970

Everglades National Park experienced wildfires that burned substantial acreage in 1974, 1985, 1986, and 1989. In 1974, incendiary fires burned more than 62,000 acres within the park. The first major fire in Shark Slough since 1962 came in May 1985. The Panther Fire was ignited by lightning on May 16. It was judged to be within the prescription and allowed to burn. It was declared out on May 22, having burned 27,628 acres. The May 1986 Eleocharis Fire, started by lightning, burned 36,415 acres in the park. Severe drought conditions in 1989 resulted in two major fires. The Ingraham Fire began on May 17 with five separate lightning strikes and was contained on May 26. It burned 98,800 acres in the heart of the park. The DOF 457 Fire was an incendiary fire that began in the East Everglades north of Chekika State Park on June 13. It entered the park on June 17 and eventually burned 15,590 acres within the park and 28,110 acres outside the park.⁷⁹⁰

The largest fire to hit the park in nineteen years was 2008's Mustang Corner Fire. This human-caused fire began on the morning of May 14, 2008, just east of the park boundary. The fire threatened nearby private property as well as habitat of the Cape Sable seaside sparrow. By May 18, the fire was sending heavy smoke over the community of Kendall and threatened to leave the park and hit a nearby prison. The fire was also headed toward an area that had been prescribe-burned in 2007. Park managers believed that if fire-retardant agents were used in this area of reduced fuel load, the fire could be brought under control. Given these circumstances, the park superintendent authorized the air drop of diluted fire-retardant chemicals. This was the first and, as of this writing, the only use of fire retardants in the park. The park's tactics were successful, and the fire was declared out as of noon, June 14, 2008, after having burned 39,465 acres. Prior prescribed burns done by the park were critical in limiting the damage from this fire. Absent those management fires, it would have been much more difficult to keep the Mustang Corner Fire away from populated areas.⁷⁹¹

⁷⁹⁰ SAR, 1974; Report on Panther Fire, 1986 Fire Occurrence Summary, Chairman, Fire Review Panel, to Supt., Jan. 19, 1990, EFR.

⁷⁹¹ Mustang Corner Fire Report, June 18, 2008, EFR; "Everglades National Park Declares Mustang Corner Fire Out," NPS media release, June 17, 2008; "Everglades Park Counts the Good and the Bad after a Blaze," *New York Times*, May 23, 2008; Thomas Richard Anderson, interview by author, Sept. 26, 2013; Rick Anderson, personal communication, Oct. 13, 2014.



**Wilderness on the Edge:
A History of Everglades National Park**

*Chapter 16:
Hurricanes and Storms*

Chapter 16: Hurricanes and Storms

Florida has over 1,300 miles of coastline and no part of the state is more than seventy-five miles from the Atlantic Ocean or the Gulf of Mexico. In the words of hurricane historian Jay Barnes:

Its low-lying terrain, in some areas only a few feet above sea level, extends miles inland from the coast. Its many rivers, lakes, and glades are prone to flooding from heavy rains. Along with its position in a near-tropical sea, these physical features contribute to Florida's great vulnerability to the recurring effects of hurricanes and tropical storms.⁷⁹²

Hurricanes are a fact of life in the Everglades, representing one more challenge for NPS managers. Hurricane preparedness at Everglades National Park has progressed from a twenty-page hurricane plan prepared in 1951 to a plan of more than 160 pages in place at this writing. Throughout the park's history, the safeguarding of humans lives—those of visitors and park staff—has been the top priority.

Following the park's establishment, the first hurricane to affect the park was the Miami hurricane of September 21, 1948.⁷⁹³ This brought a storm surge of six to eight feet at Flamingo, knocking many of the houses there off their supports. Much to the disappointment of Superintendent Beard, residents did not abandon their homes but quickly propped them back up (see Chapter 6). The park's first hurricane plan established a system of green, yellow, and red alerts to be placed in effect as a storm approached. The plan was always viewed as an evolving document to be reviewed and updated annually. The green-red-yellow system has given way to a comparable three-step arrangement of preliminary, advanced, and final hurricane preparations. The park keeps a hurricane incident management team in place, ready to go into action when a storm approaches. Working under a designated incident commander are four team leaders for planning, logistics, finance, and operations. Following 1992's Hurricane Andrew, the park has emphasized beginning hurricane preparations early, even though many times preparations will end up being unnecessary because a storm takes a different track.⁷⁹⁴

The park's experience with major storms is treated in some detail here, and all storms recorded as doing damage in the park are summarized in the table at the end of the chapter.

⁷⁹² Jay Barnes, *Florida's Hurricane History* (Chapel Hill: University of North Carolina Press, 1998), 1–2.

⁷⁹³ The National Weather Bureau did not begin naming hurricanes until 1953; Miami hurricane has become the accepted name for this storm.

⁷⁹⁴ SMR, Aug. 1951; Everglades and Dry Tortugas National Parks Hurricane Plan, 2006, EVER 22965; "Hurricane Preparedness at Everglades and Dry Tortugas," *South Dade New Leader*, May 25, 2014.

Hurricane Donna, 1960

A quiet decade for Atlantic storms came to an abrupt end in September 1960 with Hurricane Donna. Donna did considerable damage in the Caribbean before heading toward the Florida Keys and the west coast of Florida during the night of September 9. The storm moved north along the Gulf Coast, with the eye just offshore, battering Flamingo and Everglades City with winds estimated at 140 miles per hour (all of the Flamingo wind gauges were blown away) (figure 16–1, damage to concessioner’s shop at Flamingo from Hurricane Donna, 1960). In Everglades City, some 200 people took refuge on the second floor of the Collier County Courthouse as seven to eight feet of water coursed through the streets. The storm surge at Flamingo was estimated at twelve feet above normal high tide. Somehow the six people who rode out the storm there survived.⁷⁹⁵



Figure 16–1, damage to concessioner’s shop at Flamingo from Hurricane Donna, 1960

Damage to the mangrove belt from Madeira Bay west to Whitewater Bay and the visitor facilities at Flamingo was extensive. Many stands of mangrove and mahogany were killed outright. Wading birds, most of them at roost because the hurricane hit at night, were hit hard. The park estimated mortality among great white herons at 35 percent, although enough survived (about 500) that they were not wiped out. Great numbers of the more common American and snowy egrets and white ibis were killed. The park had counted fifty bald eagle nests just before the hurricane. All but two were destroyed, and four months later just twelve had been rebuilt. At Flamingo, the motel and restaurant lost their roofs; the marina, two employee residences and five comfort stations were destroyed. Overall, clean-up and rebuilding cost \$400,000, equivalent to \$3.2 million in 2014 dollars.⁷⁹⁶

⁷⁹⁵ Barnes, 197–207; Supt. Hamilton to RDR1, Sept. 15, 1960. NARA Ph, RG 79, 79–66-A-661; “Flamingo a Shambles from Hurricane Winds,” *Miami Herald*, Sept. 13, 1960.

⁷⁹⁶ SMR, Nov. 1960; Supt. Hamilton to RDR1, Oct. 21, 1960, “Hurricane Damage to Everglades National Park,” NPS press release, Nov. 2, 1960, NARA Ph, RG 79, 79–66-A-661; Barnes, 207.

Donna also affected cultural resources. With vegetation swept away, aerial reconnaissance revealed at least two previously unknown Native American mounds. A tantalizing glimpse of the pioneer-era structures still present in the 1950s is provided in a post-hurricane memo from Gulf Coast District Ranger Richard Stokes. He reported that “the storm solved many of our problems as far as buildings with the park in Gulf Coast District.” Stokes reported the Watson Place on Chatham River as almost completely destroyed, and “shacks” at Turkey Key (2), Rabbit Key (1), Pelican Key (3), and Mormon Key (unspecified number) were washed away. At Chatham Key, three camps were destroyed while one was in good condition and Darwin’s Place on Chevelier Bay remained in good condition.⁷⁹⁷

Restoration of visitor areas moved forward quickly. The road to Flamingo was opened September 18; the motel was able to reopen on December 15, and the Flamingo campground on January 7, 1961. The plantings around the Flamingo visitor center complex were replaced in 1962. A few people outside the service thought that the hurricane provided a chance to scale back the Flamingo development to something more appropriate for a wilderness, but the NPS repaired or replaced all facilities.⁷⁹⁸

Devastating as it was, Hurricane Donna provided an opportunity for park naturalists and outside scientists to measure hurricane effects in ways never before possible. Dr. Bill Robertson delivered a paper on the hurricane’s effects on bird populations at the 1961 annual meeting of the American Ornithologists Union. Park collaborator Frank Craighead established thirty-eight test plots in the mangrove forest from Little Madeira Bay to Lostmans River to monitor revegetation and recommended they be checked every six months. Craighead and Vernon C. Gilbert published a preliminary report on hurricane effects on vegetation in March 1962. Donna was the first storm to demonstrate the ability of hurricanes to spread nonnative species. The hurricane spread Australian pine (*Casuarina equisetifolia*) extensively up the park’s west coast.⁷⁹⁹

⁷⁹⁷ “Mounds ‘Found’ by Donna,” *Miami Herald*, Sept. 13, 1960; Gulf Coast District Ranger Richard A. Stokes to Supt., Oct. 9, 1960, EVER 22965.

⁷⁹⁸ SMR, Dec. 1960, Jan. 1961; Completion Report, Grading, Seeding, Planting, Flamingo, Dec. 1962; SOI to Mrs. Benjamin Butler, Nov. 9, 1960, NARA II, RG 79, NPS AF, box 420 .

⁷⁹⁹ NPS collaborator Frank C. Craighead to Supt. , Nov. 8, 1961, EVER 42242; Frank C. Craighead and Vernon C. Gilbert, “The Effects of Hurricane Donna on the Vegetation of Southern Florida,” *The Quarterly of the Florida Academy of Sciences* 25, no. 1 (March 1962): 1–9; Dr. William B. Robertson, “Effects of Hurricane Donna upon Bird Populations of Southern Florida”; G. E. Davis, L. L. Loupe, C. T. Roman, G. Smith, J. T. Tilmant, and M. Soukup, compilers and eds., *Effects of Hurricane Andrew on Natural and Archeological Resources* (Denver: NPS, 1996), xvii, <http://archive.org/details/effectsofhurrica00davi>.

Hurricane Betsy, 1965

Betsy formed as a weak tropical depression east of Barbados in late August 1965. After strengthening into a hurricane, the storm moved north of the Bahamas. It appeared headed for the Carolinas, but it changed course and moved southwest toward the tip of the Florida peninsula. Betsy hit the keys and Everglades National Park on September 8, 1965, as a category 3 hurricane with an eye forty miles wide and wind gusts estimated at 140 miles per hour. The storm brought three to five inches of rain to the park, which helped some to alleviate a severe drought. Downed trees temporarily closed the park's Pa-Hay-Okee, Mahogany Hammock, and Gumbo Limbo Trails; Cuthbert Lake Rookery also was damaged. Because of the amount of downed fuel, all of Pine Island was included in the prescribed burn program in the 1965–1966 season following the hurricane. Repairs to roads, structures, and utilities ran to \$180,000, the 2014 equivalent of \$1.4 million. After moving into the Gulf of Mexico, Betsy headed to Louisiana where she caused widespread devastation.⁸⁰⁰

Hurricane Andrew, 1992

No employee of any of the South Florida parks on duty in August 1992 is likely to forget the experience of Hurricane Andrew. Forming as a tropical wave off the Cape Verde Islands, Andrew was the first named tropical storm of the season. Andrew passed well north of Puerto Rico on August 21 and strengthened from a tropical storm to a category 4 hurricane in just thirty hours. The hurricane made landfall on the 24th just before 5:00 a.m., passing directly over Biscayne National Park, Homestead, and Everglades National Park. A small, fast-moving, but incredibly intense storm, Andrew had sustained winds of 140 miles per hour and gusts up to 175 miles per hour. Rainfall from the hurricane was a minor factor, and the storm surge mainly affected properties close to Biscayne Bay. It was Andrew's winds that wreaked havoc across a narrow band of South Florida.⁸⁰¹

The park's hurricane preparedness plan was triggered on August 22, a Saturday. The park's chief ranger and maintenance chief, having primary responsibility under the plan, were both out of the area. Pine Island District Ranger Robert Panko reached Superintendent Richard Ring by phone and got authority to begin implementing the plan on Saturday afternoon. Park staff made hurried arrangements, getting visitors out of the park, and releasing most employees to their homes around 2 p.m. on Sunday. Employees in park housing assembled at shelter locations at Pine Island, park headquarters, and the Oasis Visitor Center in Big Cypress. When employees ventured out at daybreak on August 24 after the storm had passed,

⁸⁰⁰ Barnes, 223–30; SMR, Sept., Nov. and Dec. 1965; Acting RDSE to Dir., Oct. 19, 1965, NARA Ph, RG 79, 79–69-A-384.

⁸⁰¹ Barnes, 261–65.

they confronted a scene of almost unbelievable destruction. Park interpreter Deborah Liggett remembered, “We weren’t at the end of the world, but we could see it from here.” Conditions within the park remained hazardous for the first seventy-two hours as crews went out to survey damage. Passing over the mainland in just over three hours, Andrew left a narrow, twenty- to thirty-mile-wide path of devastation. At Everglades, the main visitor center, Pine Island, Long Pine Key, the Daniel Beard Center, Chekika, and several boardwalk trails were heavily damaged, while facilities at Everglades City, Flamingo, and Key Largo were virtually untouched. Many downed trees had to be removed before roads were passable. The park requested a Type I incident management team, which was activated on August 25, with Rick Gale from the NPS Washington, DC, ranger activities division as incident commander. On October 8, a type II incident management team under Bill Blake took over to coordinate the return of authority to the park superintendent. The type II team demobilized on October 25 but continued to provide administrative support to park managers during a two-month transition period. Some 300 NPS employees from other parts of the country served on the two teams.⁸⁰²

Andrew left nearby communities such as Homestead, Florida City, Naranja, and Cutler Ridge in chaos, and the first priority was finding and assisting park employees. Andrew left 175,000 homeless and 1.4 million temporarily without power. One Fort Jefferson employee, Natividad “Tito” Roheno, was killed by falling debris at his Naranja Lakes home. Among the 258 employees of the four parks, 101 had their homes destroyed, while another 75 suffered major property loss. The storm demolished the old Royal Palm Lodge at its new site in Homestead and virtually destroyed Homestead AFB. Phone service, including cell phone service, was spotty to nonexistent.⁸⁰³ The incident management team used satellite phones for the first time in an NPS disaster. Many staff members were in a state of shock, and employee assistance teams went door to door helping to stabilize houses and salvage possessions and providing other assistance. A donation fund, managed by Eastern National Parks and Monuments Association, collected \$200,000 servicewide. Looting was widespread after Andrew and many park employees had to stand guard over their homes with shotguns. Understanding the toll the situation was taking, the NPS did its best to arrange hardship transfers for employees who requested them. About thirty employees of the three parks ended

⁸⁰² “Embracing the Everglades,” *Miami Herald*, Dec. 18, 1992; NPS, *Reference Manual 55, Incident Management Program*, <http://www.nps.gov/policy/rm55manual.pdf>; Hurricane Andrew Incident Management Team, *Hurricane Andrew, 1992: The National Park Service Response in South Florida* (Denver: NPS, 1994), 47–48, 61–62; Robert Panko, interview with Nancy Russell and Siobhan Millar, June 2, 2009; Richard Ring, interview by author, July 18, 2012. The NPS developed the incident command system in the 1980s to coordinate activities in fighting major wildland fires. The system ensured that uniform procedures were in place before an incident and that a team with the necessary skills could be quickly assembled from across the National Park System. Andrew was the first use of the system for a natural disaster.

⁸⁰³ Although not as common as they are now, cell phones were owned by 11 million Americans in 1992, and some park staff had them.

up moving on. Outside the park, National Guard troops and nonprofits handled relief efforts, soon supplemented by regular military units.⁸⁰⁴

Andrew affected employees' possessions in the short term and their emotional resources over the long term. Superintendent Ring, who had been at Everglades just a bit over three months, had his house destroyed. As he describes it, "we weren't looking outside to see what was happening. We moved from room to room in our house as the storm grew and ended up in our garage inside my minivan. The house came apart around us; it was pretty well totaled." Mike Soukup, director of the South Florida Natural Resources Center, was luckier, having purchased a 1957 house that "was built to withstand hurricanes. We watched as our neighbors' houses literally flew past us, but our house never got any water inside." House burglaries were frequent in the months following the storm. Larry Belli, assistant superintendent at the time, remembers the husband of one park employee who "was in the front yard of his house with a gun for the better part of a year. His wife finally talked him into going out to dinner one night, and that was the night they got looted." That was the last straw, and the employee transferred to another park. For months following Andrew, park employees spent their working days rebuilding the park and their off-duty hours rebuilding their homes.⁸⁰⁵

Resource Damage from Andrew

Flooding is the major cause of wildlife death in hurricanes; there was little flooding with Andrew because it was a relatively dry storm. Maximum rainfall recorded in Everglades National Park was 4.5 inches; most areas got 1.5 inches or less. Animals with radio collars—panthers, black bears, and deer—could be checked relatively quickly; none of the collared animals perished. Alligators were already experiencing a poor nesting year, and Andrew broke up 27 percent of nests. Crocodiles and manatees were not affected. Many birds disappeared for a few days, but soon were back in the park in customary numbers. Mangrove forests, pine uplands, and hardwood hammocks near the storm's eye were severely affected. There were many downed trees and limbs in the park's pinelands (figure 16–2, damage in pine uplands from Hurricane Andrew). Approximately 70,000 acres of mangroves were knocked down, but many trees showed new growth within weeks. Andrew did little damage to marine resources in Florida Bay or along the park's Gulf Coast. Archeological sites on tree islands in the park and in the Ten Thousand Islands suffered relatively minor damage from uprooted trees.⁸⁰⁶

⁸⁰⁴ SAR, 1992; "Transition Plan, Hurricane Andrew Incident," Oct. 1992, EVER-01767.

⁸⁰⁵ Richard Ring, interview by author, July 18, 2012; Michael Soukup, interview by author, July 25, 2012; Lawrence Belli, interview by author, June 27, 2012; "Rebuilding Continues," *Federal Times*, Aug. 30, 1993.

⁸⁰⁶ Gary E. Davis, General Comments—Resource Conditions, Everglades, Biscayne, and Big Cypress Resulting from Hurricane Andrew, n.d. [Sept. 1992], EVER 58222; Gary E. Davis, et al., *Effects of Hurricane Andrew*, 97–99.



Figure 16–2, damage in pine uplands from Hurricane Andrew

At the urging of Southeast Region Chief Scientist Dominic Dottavio and others, the NPS brought together a team of twenty-three scientists to assess the post-hurricane condition of natural and archeological resources in Everglades, Biscayne, and Big Cypress. Nationally prominent experts worked with local scientists and formed three teams: marine, terrestrial, and freshwater. In addition to making an initial assessment, the teams made short-term and long-term monitoring and mitigation recommendations. Gary E. Davis, former SFRC employee, then at Channel Islands, and Cameron Shaw of the U.S. Fish and Wildlife Service were the team coordinators, along with Laurie Park of Everglades, who handled logistics. The teams were in the parks from September 15–23. Overall, the group concluded that “initial ecosystem responses seemed normal.”

The scientists noted that hurricane winds almost certainly spread nonnative plant species. Scientists who participated later collaborated to produce a special issue of the journal *BioScience* in April 1994 containing six articles on the effects of Hurricane Andrew.⁸⁰⁷

⁸⁰⁷ Stuart L. Pimm, Gary E. Davis, Lloyd Loope, Charles T. Roman, Thomas J. Smith III, and James Tilmant, “Hurricane Andrew,” *BioScience* 44, no. 4 (Apr. 1994): 224–29; Gary E. Davis, et al., *Effects of Hurricane Andrew*, 4–6. The latter document contains a list of all team members and peer reviewers.

A major concern with hurricanes in South Florida is the opportunity they provide for the spread of invasive species. The scientific team that visited Everglades in September recommended monitoring for the spread of species, such as Brazilian pepper. During Andrew, several sites outside the park with exotic animals were destroyed, releasing their denizens into the wild. Among the specimens that escaped were Burmese pythons. As recounted above in Chapter 14, Burmese pythons since then have established a breeding population in the park.⁸⁰⁸

Damage to Park Facilities

Damage to park facilities was estimated at \$30 to \$40 million. The key to reopening the park was restoring electrical service. Power poles were down all along the main park road and the roads to Royal Palm and the Dan Beard Center. The park had previously planned to place electrical cables underground, and this project was fast-tracked after Andrew. Park managers set the goal of reopening the park on December 15, in time for the winter tourist season. Achieving this goal depended on having the power grid back up. A \$6.5 million contract for laying the buried cable for the new electrical system was completed in 108 working hours, and the work was rushed along. The main visitor center and some employee houses were not salvageable and were demolished. A number of structures, including the Dan Beard Center, suffered roofing damage and water intrusion. Chapter 18 covers damage to museum collections in the Beard Center. As soon as contracts could be let, crews began work on debris removal, reroofing buildings, and repair/replacement of damaged trails. Three residential buildings at Pine Island were damaged beyond repair and were burned as training exercises for the park's structural fire crew. A contemporary park report described them as dormitory housing, but a comparison of before and after site plans indicates that they were two seasonal duplex structures and a three-bedroom house variously described as the chief clerk's residence or the superintendent's residence. The latter was built in 1951 and had oak floors and cypress paneling.⁸⁰⁹

The areas of the park that were outside Andrew's narrow path of destruction were back in service relatively quickly. The Everglades City visitor center and boat tours were running again on September 21. Shark Valley and its tram tours reopened to the public by Nov. 3. The reopening of the main park entrance, Royal Palm, and Flamingo occurred on schedule on December 15 and received considerable media attention. Park interpreters emphasized to visitors that hurricanes are a natural occurrence, and that the Everglades ecosystem was, for the most part, responding naturally. A temporary visitor center in a mobile unit served as an orientation point at the park entrance. The Gumbo Limbo and Pinelands Trails were open, as was part of the Mahogany Hammock Trails. The Anhinga

⁸⁰⁸ Davis, et al., *Effects of Hurricane Andrew*, 38–40.

⁸⁰⁹ SAR, 1992; NPS, Andrew Update—Day 365, Aug. 1993, EVER-58222; Form 10–768, Chief Clerk's Residence, Pine Island, Dec. 28, 1968, EVER 22965; Oron Bass, personal communication, Oct. 22, 2013.

Trail had to be rebuilt, and it opened at the end of February 1993. The Chekika and Long Pine Key campgrounds remained closed through the 1992–1993 season. As described in Chapter 7, the Ernest F. Coe Visitor Center opened in 1996.⁸¹⁰

The effects of Andrew on park resources and park staff were long lasting. On August 27, 1993, the three South Florida parks “held a general staff meeting to commemorate the anniversary of Hurricane Andrew. By bringing the park family together, the year’s experiences, accomplishments, and future plans were again shared as part of the healing process.” The park made substantial revisions to its hurricane preparedness plan in the wake of Andrew. One lesson of that storm was that park employees need time to prepare their homes and families for an approaching hurricane. The goal now is to release staff at least 24 hours before a hurricane is expected to arrive. Hurricane preparedness plans were also revamped from documents that had few details on who was to perform what activities during a storm. Plans now are more like incident action plans prepared in advance, with roles assigned to individuals, which can be implemented as needed.⁸¹¹

Hurricane Katrina, 2005

Katrina developed in the Bahamas in late August and was a weak category 1 hurricane when it made landfall near the Dade/Broward County line around 6:30 p.m. on August 25. The storm spent about seven hours over Florida before entering the Gulf of Mexico. Although it did far greater damage later in Louisiana, Katrina had significant effects at Everglades. Katrina was barely a hurricane and forecasts called for it to pass to the north of Flamingo, so park management opted not to evacuate that area. The storm took an unanticipated dip to the south and ended up bringing a storm surge of approximately four to six feet at Flamingo. The surge damaged boats and deposited a large amount of dead sea grass. The storm damaged or destroyed a number of government and private vehicles that remained on site because of the failure to evacuate. There was also considerable loss of employee property (figure 16–3, houseboats floated onto dock by Hurricane Katrina, 2005). Some backcountry campsites were also damaged by the storm surge. August 25 proved to be a harrowing night for the employees at Flamingo. Flamingo District Ranger Tony Terry describes four-foot waves in front of his house and alarms sounding through the night as the storm surge bounced vehicles around.⁸¹²

⁸¹⁰ “Everglades Opens Shark Valley Area, *Miami Herald*, Nov. 3, 1992; “Everglades Park’s Main Street Reopens,” *Miami Herald*, Dec. 15, 1992; “Everglades Park Reopens Trail,” *Miami Herald*, Feb. 28, 1993.

⁸¹¹ SAR, 1993; Robert Panko, interview with Nancy Russell and Siobhan Millar, June 2, 2009.

⁸¹² SAR, 2005; Tony Terry, interview by author, Jan. 18, 2012; NOAA, <http://www.ncdc.noaa.gov/special-reports/katrina.html>.



Figure 16–3, houseboats floated onto dock by Hurricane Katrina, 2005

Park staff began clean-up operations immediately after the storm passed, and an incident management team (IMT) under the command of Gordon Wissinger was in the park from August 30 through September 15. The major accomplishments of the IMT were restoring power to Flamingo, removing debris and sediment, clearing trails, and repairing and replacing appliances and equipment. Land-line telephone service had to be reestablished, and Flamingo residents were provided rented cell phones in the interim. The IMT called in a critical incident stress management (CISM) team, which conducted six group debriefings and additional one-on-one sessions to help staff cope with stress and restart their lives. During the IMT’s duration, approximately \$850,000 was expended on salaries, contracts, and other recovery expenses. One major lesson from Katrina was to err on the side of caution in implementing the park’s hurricane preparedness plan, which indicated that Flamingo should have been evacuated.⁸¹³

⁸¹³ Gordon Wissinger, “Hurricane Katrina Incident, Everglades and Dry Tortugas National Parks, Aug. 30–Sept. 15, 2005” (Homestead, FL: NPS, Sept. 15, 2005); Allyson Gantt, personal communication, June 28, 2013.

Hurricane Wilma, 2005

The park was still recovering from Katrina when a stronger hurricane, Wilma, passed over South Florida on October 24. Wilma formed as a tropical depression south of Jamaica on October 15, 2005, and moved to the west and northwest. The storm touched the northeastern tip of the Yucatan peninsula on October 21 as a category 4 hurricane and moved into the open waters of the Gulf of Mexico. Wilma then moved to the northeast, making landfall near Cape Romano on October 24 as a category 3 with sustained winds of 120 miles per hour. The hurricane was over the Florida peninsula for a bit more than four hours before moving into the Atlantic Ocean.⁸¹⁴

On October 19, Superintendent Kimball formed a hurricane incident management team with Bob Panko as incident commander (IC). It became the IC's responsibility to oversee the completion of hurricane preparations and see to the well-being of park staff. Park staff began securing buildings, moving equipment, and instituting a phased closure of the park. Shark Valley and Everglades City were shut down by the close of business on Thursday, October 20. An all employees meeting was held at 4 p.m. on October 22 to go over closing procedures and other matters; that same day, Supervisory Park Ranger Curt Dimmick took over as IC from Bob Panko, who left for previously scheduled fire training in West Virginia. The main entrance and the entire park were closed at 8 a.m. on Sunday, October 23. Most employees by then had been released to make preparations at their homes, and Flamingo residents sheltered at headquarters. Once the storm had passed, a national incident management team under IC J. D. Swed formally took over from the park team on October 25, although the hand-off was implemented over several days. The national team gave way to a park type 3 incident management team on November 9; this team demobilized as of November 21, turning responsibility back over to the park superintendent.⁸¹⁵

Wilma was a fast-moving storm with a wide eye. Her winds were considerably stronger north of the eye; to the south, most of the damage was from storm surge. Everglades City and Chokoloskee had storm surges of eight to ten feet, and Flamingo from six to eight feet (figure 16–4, Flamingo housing area following Hurricane Wilma, 2005). The hurricane did not lose much strength over the peninsula and was still a category 2 when she passed into the Atlantic. Wilma caused considerable damage in the built-up areas of Fort Lauderdale and West Palm Beach. In the immediate aftermath of the storm, six million customers were without power in the state.⁸¹⁶

⁸¹⁴ NOAA, Hurricane Wilma, <http://www.nhc.noaa.gov/outreach/history/#wilma>.

⁸¹⁵ Supt. Kimball to Bob Panko, Oct. 19, 2005; Bob Panko, Incident Commander, to Supt., Oct. 22, 2005; Transfer of Command Plan for Everglades and Dry Tortugas National Parks, n.d. [1st week Nov. 2005], EVER 22965; Allyson Gantt, personal communication, June 28, 2013.

⁸¹⁶ "Hurricane Wilma, 2005," *Coastal Breeze News* website, <http://www.coastalbreezenews.com/2010/08/12/hurricane-wilma-2005/>.



Figure 16-4, Flamingo housing area following Hurricane Wilma, 2005

Because Wilma did such widespread damage across South Florida, there was considerable competition for recovery resources, slowing the park's rebound. Within Everglades National Park, Flamingo took the most serious hit. As the *Miami Herald* put it:

Hurricanes Katrina and Wilma flooded the aging hotel and nearby cottages, leaving behind a soggy, stinking, uninhabitable mess. The storms filled the ground-floor rooms with six inches of bay bottom, fried electrical systems and trashed just about everything not made of concrete.⁸¹⁷

Power was restored to nearly the entire park by the first week in November and to the Flamingo residential area by the end of November. The Everglades City Visitor Center reopened November 3, the main visitor center on November 11, and the Shark Valley area on November 12. It took some time to clear the main road all the way to Flamingo, and the Flamingo Visitor Center and the marina store did not reopen until sometime in December. The Flamingo lodge and housekeeping cabins were damaged beyond repair and the wreckage was ultimately hauled away. Park staff, a representative from the NPS Southeast Regional Office, and a representative from the Florida State Historic Preservation Office conferred on-site and concluded that the lodge was not eligible for

⁸¹⁷ "Ruined Lodge Needs Plan, Funds," *Miami Herald*, Oct. 1, 2006.

the National Register. The housekeeping cabins had not reached fifty years of age and were found not to be exceptionally significant. The park received \$5.6 million in hurricane recovery funding in FY 2007 and \$2.1 million in FY 2008. Clearing some 10,000 cubic yards of sediment from the Flamingo boat basin was a major chore that occupied much of the summer of 2006 and cost \$540,000. The park was able to open the boat ramps in August 2006.⁸¹⁸

Wilma did not cause great damage to natural resources and may have had a beneficial effect in clearing sediments from Florida Bay. Many trees were downed on canoe trails, which took some weeks to clear away. Following Wilma, Margo Schwadron, a SEAC archeologist, did a preliminary assessment of ten archeological sites on the Gulf Coast. Wave action had eroded a number of shell midden sites and the root balls of downed trees had exposed some artifacts at others.⁸¹⁹

The implementation of the park's hurricane preparedness plan was considerably more successful for Wilma than it was for Katrina. Cooperation among park divisions and between park staff and IMT staff was judged to be superior. The park experienced shortages of generator fuel after Wilma, and keeping tanks topped off in the future emerged as a recommendation. The two hurricanes of 2005 took a considerable toll on park staff. Within a year after Wilma, a number of employees stationed at Flamingo had moved on to other park units.⁸²⁰

⁸¹⁸ NOAA, Hurricane Wilma, <http://www.nhc.noaa.gov/outreach/history/#wilma>; "High Season Is a Casualty after Storms," *New York Times*, Nov. 23, 2005; SAR, 2005; "Everglades National Park Reopens Florida Bay Boat Ramps in Time for Labor Day Holiday," ENP media release, Aug. 18, 2006, ENP CF; Allyson Gantt, personal communication, June 28, 2013; Fred Herling, personal communication, Oct. 30, 2013.

⁸¹⁹ "High Season Is a Casualty after Storms," *New York Times*, Nov. 23, 2005; Margo Schwadron, SEAC, to Bob Panko, ENP, n.d. [Nov. 2005], EVER 22965.

⁸²⁰ NPS, Wilma: What Were the Most Difficult Challenges Overcome?, n.d. [Nov. 2005], EVER 22965.

Summary of Hurricanes and Tropical Storms Doing More than Minimal Damage to Everglades National Park

Storm	Date	Notes
Miami Hurricane	Sept. 21, 1948	Storm surge of six to eight feet at Flamingo.
Hurricane Donna	Sept. 8, 1960	\$400,000 damage, mostly at Flamingo.
Hurricane Isbell	Oct. 14, 1964	Passed directly over Everglades City from the Gulf. Destroyed Lostmans River Ranger Station, \$11,000 damage.
Hurricane Betsy	Sept. 7–8, 1965	\$180,000 in damage; boardwalk trails were rebuilt.
T. S. Dennis	Aug. 17, 1981	Heavy rainfall and flooding in East Everglades.
Hurricane Floyd	Oct. 12, 1987	Weak category 1; \$17,000 required for park cleanup.
Hurricane Andrew	Aug. 23, 1992	\$30 to \$40 million in damage to the park, including the loss of the main visitor center and many roofs.
T. S. Gordon	Nov. 16, 1994	Caused flooding in the East Everglades.
Hurricane Katrina	Aug. 2005	Damage to buildings and vehicles at Flamingo.
Hurricane Wilma	Oct. 24, 2005	\$7 million in damage; Flamingo Lodge and cabins a total loss.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 17:
Archeological and Historic Resources

Chapter 17: Archeological and Historic Resources

Everglades National Park was created primarily because of its unique flora and fauna. In the 1920s and 1930s, there was some limited understanding that the park might contain significant prehistoric archeological resources, but the area had not been comprehensively surveyed. After establishment, the park's first superintendent and the NPS regional archeologist were surprised at the number and potential importance of archeological sites. NPS investigations of the park's archeological resources began in 1949. They continued off and on until a more comprehensive three-year survey was conducted by the NPS Southeast Archeological Center (SEAC) in the early 1980s. In addition, the park had few structures from the historic period in 1947, and none were considered of any historical significance. Although the NPS recognized the importance of the work of the Florida Federation of Women's Clubs in establishing and maintaining Royal Palm State Park, it saw no reason to preserve any physical reminders of that work.

Archeological Investigations in Everglades National Park

The archeological riches of the Ten Thousand Islands area were hinted at by Bernard Romans, a British engineer who surveyed the Florida coast in the 1770s. Romans noted:

[W]e meet with innumerable small islands and several fresh streams: the land in general is drowned mangrove swamp. On the banks of these streams we meet with some hills of rich soil, and on every one of those the evident marks of their having formerly been cultivated by the savages.⁸²¹

Little additional information on sites of aboriginal occupation was available until the late nineteenth century when South Florida became more accessible and better known to outsiders. Among the visitors to the region were avocational archeologists and some scientists interested in prehistoric sites. Those who investigated the Gulf Coast in this period did most of their work in areas north of the future Everglades National Park. In 1885, Andrew E. Douglass, an astronomer who spent winters in Florida, investigated sites on the southwest coast, including Lostmans River. Frank Hamilton Cushing in 1893 made some spectacular finds on Marco Island, just north of the future park. Muck soils there preserved wooden artifacts that almost always failed to survive elsewhere in the South Florida environment. These included masks, batons, and the six-inch-high statuette of a panther that has been widely reproduced. Cushing's discoveries inspired others to dig in Southwest Florida. Among these was Clarence B. Moore. Heir to a

⁸²¹ Bernard Romans, *A Concise Natural History of East and West Florida* (New York: R. Aitken, 1775), 289, https://play.google.com/books/reader?id=GpI5AAAACAAJ&printsec=frontcover&output=reader&authuser=0&hl=en_US.

fortune made in the manufacture of paper, Moore made trips to the southwest Gulf Coast in 1900, 1904, 1906, 1907, and 1918. He was mostly interested in mounds and earthworks, and his published work largely lacks “stratigraphic interpretation and context, but these details were often recorded in his field notes.” Moore visited Lostmans Key twice, but he ended up concluding that the area that would become the park was of minor archeological significance.⁸²²

As noted in Chapter 3, physical anthropologist Aleš Hrdlička investigated the area of the Ten Thousand Islands south to Cape Sable in 1918. He did no excavating but described the sites he encountered in considerable detail. Hrdlička differentiated between shell heaps, which he construed as platforms for habitation, middens, and burial mounds. In 1923, Guy Fewkes of the American Bureau of Ethnology conducted a survey that included Lostmans Key and Chokoloskee as well as sites farther north. Follow-up excavations by Henry Collins and M. W. Stirling focused on Horr’s Island and Captiva Island, rather than areas that would become part of the park. Based on the work already accomplished, the NPS chief archeologist, A. R. Kelly, in 1932 pressed to have archeological resources considered in setting the park boundary. He also observed that “Florida, despite its acknowledged importance for history and archeology, has done less than any other state to preserve these values.” The inclusion of archeological sites did not play a role in the political compromise on a park boundary that was finally reached in the 1940s (see Chapter 4).⁸²³

After establishment, Superintendent Beard entered into an informal arrangement with the Department of Sociology and Anthropology at the University of Florida to perform a preliminary survey of prehistoric archeology in the park. Dr. John Goggin, pioneer of professional archeology in South Florida, and his students conducted this work. Goggin was interested in the cultural area from Lake Okeechobee to the keys, and he had begun doing field work in Dade County in the 1930s. Goggin’s teams spent four winters from 1949 through 1952 in the park. In January and February 1949, NPS Region 1 archeologist John C. Harrington joined Goggin while he was investigating Rookery Mound, the Cane Patch, and the Banana Patch. Harrington was surprised at the extent of the archeological sites in the Everglades, which he described as “more exciting than in many areas.” In 1950 and 1951, Goggin worked at Lostmans River, Onion Key, the Hamilton Garden

⁸²² Jeffrey M. Mitchem, “New Information about Clarence B. Moore’s Expeditions to Peninsular Florida,” paper presented at meeting of Florida Anthropological Society, April 1999, http://www.academia.edu/1435940/New_Information_About_Clarence_B._Moore's_Expeditions_to_Peninsular_Florida. All of Moore’s published papers on southeastern archeology have been reprinted by the University of Alabama Press. Three volumes cover Florida, including *The West and Central Florida Expeditions of Clarence Bloomfield Moore* (1999), which contains his “Notes on the Ten Thousand Islands.”

⁸²³ Randolph J. Widmer, *The Evolution of the Calusa, a Nonagricultural People on the Southwest Florida Coast* (Tuscaloosa: University of Alabama Press, 1988), 43–45; A. R. Kelly, Chief, Archeological Sites Division, NPS, to Supt., Fort Marion National Monument, Apr. 6, 1932, NARA II, RG 79, NPS CCF, box 920.

Patch, and Johnson Hammock. The Cape Sable area was the focus of the 1952 season. While Goggin was at work, Superintendent Beard noted, “It is quite evident that archeological sites in the park have more value for scientific and interpretive purposes than the service had realized when the park was proposed and created.” Regrettably, Goggin never produced a comprehensive report on his investigations. Goggin expanded on Alfred L. Kroeber’s original definition of the Glades tradition (2500 YBP to AD 1700), delineating subregions and establishing the first stratigraphic sequence for South Florida. From the early 1950s until his death in 1963, he continued to refine this sequence. This sequence has been adjusted by subsequent scholars, but has provided the basis for subsequent archeological analyses (Figure 17–1, the remains of a prehistoric ceramic pot found in the park).⁸²⁴



Figure 17–1, the remains of a prehistoric ceramic pot found in the park

⁸²⁴ J. C. Harrington, Regional Archeologist, to Dir. Drury, Feb. 23, 1949, NARA II, RG 79, NPS CCF, box 904; John M. Goggin, “Archeological Sites in the Everglades National Park, Florida,” Laboratory Notes 2, Anthropology Laboratory, University of Florida, June 1952; J. C. Harrington, Regional Archeologist, to RDR1, Feb. 8, 1949, NARA Ph, RG 79, 79–67-A-1022; NPS SEAC, Everglades National Park Overview and Research Design, 1982 (Tallahassee: SEAC, 1982), 12; SMR, Jan. 1950.

Following Goggin's work, relatively little archeological work was done in the park in the 1950s and 1960s. In this period, much of the archeological survey work in the broader Everglades region was done by avocational archeologists. Park rangers also recorded the locations of archeological sites and did some surface collecting. For example, following Hurricane Donna in 1960, a ranger collected a "half bucket" of artifacts on Rabbit Key. In 1955, archeologist Dr. William Sears mapped and tested a large shellwork site at the mouth of Turner River that subsequently came into NPS ownership. In 1964, NPS Regional Archeologist John W. Griffin began what was planned as a multiyear, systematic survey of sites within the park. Because of internal NPS changes, however, only the first year was completed. In that year:

Efforts were concentrated on the area between Everglades City and Lostmans River, and consisted primarily of visiting and surface collecting previously known sites under the guidance of Ranger Richard Stokes. Working out of the Lostmans River Ranger Station, test excavations were conducted at Onion Key, Walter Hamilton Place, and Hamilton Garden Patch. . . . Twenty-one sites were visited.

The park established an archeological site file at this time.⁸²⁵

In 1965, the NPS contracted with the Florida Atlantic University Department of Anthropology to comprehensively map archeological sites within the park. Dr. William H. Sears ran this project, which pioneered the use aerial photography in locating sites. By correlating the photography with a literature search, the survey located 114 sites, only seventy-four of which were ultimately determined to be within the park boundary. During this effort, Dr. William Kennedy of Florida Atlantic University excavated intact pots on Mormon Key. This effort resulted in a reorganization of the park's site file and a base map of sites. Sears's team conducted relatively few field surveys to verify site locations. The report of this project contained "discussions of site types, ceramic sequences, and culture areas." This was the most comprehensive survey of park archeological sites prior to a multiyear survey undertaken by SEAC in the early 1980s. From time to time, excavations for other purposes uncovered artifacts. In the course of the 1968 dredging of portions of Taylor Slough adjoining the Anhinga Trail, prehistoric material, including Glades Plain and Glades Tooled ceramic sherds, was recovered. Also in 1968, John Griffin worked at the Bear Lake Mounds. In 1970, Griffin did test excavations at Panther Mound (also known as Cabbage-Rattlesnake Mound).⁸²⁶

⁸²⁵ William H. Sears, "The Turner River Site, Collier County, Florida," *Florida Anthropologist* 9, no. 2:47–60; Logs from Gulf Coast District Ranger Station, 1960 to ca. 1988, EVER-01718; John W. Griffin, *Archeology of Everglades National Park; A Synthesis* (Tallahassee: SEAC, 1988), 64, 168.

⁸²⁶ Griffin, *Synthesis*, 65, 169; NRHP nomination, Anhinga Trail, Nov. 5, 1996; SMR, July 1968.

1980s Survey by the NPS Southeast Archeological Center

The 1980s SEAC survey involved three seasons of work between 1982 and 1984. The teams profited from experience gained in an archeological survey of the Big Cypress National Preserve conducted from 1977 to 1981. An important approach was to use infrared aerial photography in developing a site signature model that was predictive of locations of sites on hammocks. The 1980s field work was preceded by an analysis of the 168 previously assigned site numbers in the Florida State Master Site File. Previous surveys had concentrated on more easily accessed coastal sites; the 1980s work added substantially to the inventory of sites in the interior of the Everglades. The first year's survey was conducted in May and June 1982 and focused on the Shark River Slough and eastern Whitewater Bay. The second season's survey was performed from January to early April 1983 and involved reconnaissance and ground truthing of sites accessible by airboat. The reconnaissance of sites in the coastal zone and mangrove forests began in the second season and was completed in the third season from January to mid-April 1984. The primary goal of the survey was to locate and ground-truth sites. Data collection was limited to surface collection and random auger and shovel tests. Nine sites were mapped (figure 17-2, a prehistoric deer pin found in the park).⁸²⁷



Figure 17-2, a prehistoric deer pin found in the park

⁸²⁷ Griffin, *Synthesis*, 176. The reports of the SEAC effort are John E. Ehrenhard, Gregory Komara, and Robert Taylor, *Everglades National Park Cultural Resource Inventory, Interim Report Season 1* (Tallahassee: SEAC, 1982); Robert C. Taylor, *Everglades National Park Archeological Inventory and Assessment, Season 2* (Tallahassee: SEAC, 1984); and Robert C. Taylor, *Everglades National Park Archeological Survey, Season 3* (Tallahassee: SEAC, 1985).

The SEAC survey identified 193 sites that were entered into the NPS's Archeological Sites Management Information System (ASMIS). The sites were classified into the following nine categories:

Site Type	Number
Shell works	12
Shell middens	20
Eroded beach sites	21
Mangrove zone earth middens	26
Relic shell ridges	6
Shark River Slough earth middens	62
Taylor Slough earth middens	3
Miscellaneous sites	7
Earth middens, artifact scatters, single artifacts, historic sites of the Western Everglades	34
TOTAL	193

Roughly half of the sites were coastal and half inland. The coastal sites were generally considerably larger. Most of the inland sites were on the higher portions of hammocks in the Shark River Slough. Of the 193 sites, only 34 percent had diagnostic ceramics allowing tentative dates to be assigned. Twenty percent of the sites had no ceramic artifacts and 46 percent had only Glades plain work. Glades plain work was made throughout the Glades tradition and thus does not appreciably narrow the date range for a site. Even when diagnostic ceramics were available, usually only a few were collected, and hence, they could not be considered representative of the full range of site occupation. In the park's first four or five decades, the collection of ceramic fragments at a site was often quite limited; more recent site investigations typically result in large numbers of diagnostic sherds. In 1988, under a contract with the NPS, archeologist John Griffin prepared a summary largely based on the 1980s SEAC work, entitled *The Archeology of Everglades National Park: A Synthesis*.⁸²⁸

Archeological investigations since the SEAC survey have mostly been associated with construction projects that involved ground disturbance, accidental finds, and surveys of land added to the park. In winter 1991/92, campers on Pavilion Key reported the presence of two skeletons. Three pottery sherds classified as Glades plain were associated with the burials. SEAC archeologists and park staff reburied the remains above the high tide line, which was the preferred treatment of the Miccosukee Tribe of Indians of Florida.⁸²⁹

⁸²⁸ Griffin, *Synthesis*, 179.

⁸²⁹ Archeologist Bennie Keel to Chief, SEAC, Jan. 8, 1992, SEAC Library.

In 2004 and 2005, SEAC did an archeological assessment of the East Everglades addition to the park that resulted in the addition of forty-two sites to the park's ASMIS database entries. Based on previous experience, the survey concentrated on tree islands.

Vegetation typical of the higher elevations of the islands was used as a predictor of archeological sites. Of forty-three tree island sites selected as potential targets, forty-two had archeological remains. All forty-two were earth middens. Five of the sites had late Archaic (5,000 to 3,000 YBP) components, "considerably earlier than previously thought for human occupation in the interior Everglades." In one instance, at the Duck Club/Sour Orange Hammock site, a radiocarbon date of 5580 to 5310 YBP was obtained. This survey also revealed a buried mineralized soil layer on several trees islands. The presence of middens containing archeological artifacts below the mineralized layer raises the distinct possibility that some tree islands formed over the aboriginal middens.

Excavations at many more tree islands are needed before more definite conclusions can be drawn about role of humans in tree island formation. It can be stated with assurance, nonetheless, that native people were present in the interior of the Everglades from the period that the Everglades as we know them took shape. The creation of Everglades landscapes then is the result of the interaction of human activity and nonhuman natural processes.⁸³⁰

Following Hurricanes Katrina and Wilma in 2005 SEAC archeologist Jill Y. Halchin spent two weeks in the park assessing the condition of sixteen archeology sites, primarily in the Ten Thousand Islands area. She found three sites that had been destroyed and six that had suffered serious erosion. Beach sites had been particularly hard hit. On this visit, Halchin discovered six historic period sites, five of them in the vicinity of Flamingo and one on Wood Key. The park attempted to get some hurricane recovery funding, which totaled in the tens of millions of dollars, for assessing and stabilizing sites, but was told that that type of project did not qualify. NPS funding and some funding from the National Geographic Society allowed work to be done from 2007 to 2010. At beach sites, this involved surface collecting and shovel tests to determine the presence of subsurface artifacts. At shell island sites, such as Sandfly Key, three-dimensional scanning of eroded banks was undertaken to provide a baseline that will be useful in tracking future erosion. Additional work is needed and will be undertaken as funds become available.⁸³¹

Following the 1980s SEAC survey and John Griffin's 1988 synthesis, the survey of the park's archeological sites was described as "reasonably complete." The state of knowledge was that of a Phase I survey, meaning that the location, site type, and size of

⁸³⁰ Margo Schwadron, "Everglades Tree Islands Prehistory: Archaeological Evidence for Regional Holocene Variability and Early Human Settlement," *Antiquity* 80, no. 310 (Dec. 2006); Margo Schwadron, *Archeological Damage Assessment of Sites Burned in the Mustang Corner Fire, Everglades National Park, Florida* (Tallahassee: SEAC, 2008), 10–11; Margo Schwadron, personal communication, Aug. 23, 2013.

⁸³¹ Trip Report, Archeologist Jill Y. Halchin, SEAC, to Dir., SEAC, Mar. 8, 2006, SEAC accession 2027, SEAC library; Margo Schwadron, personal communication, Aug. 23, 2013.

sites are known but little else (figure 17–3, archeological site work). The consensus today is that knowledge of the archeological sites in the park is far from complete. As of this writing, the park has 310 sites on its official ASMIS database listing. The most prevalent site types are earth middens (149) and shell middens (31). Areas within the park where undiscovered sites may exist include the upland areas in the eastern portion of the park, which have not been extensively surveyed and tree island sites. The work done in the East Everglades suggests that deeply buried sites may exist on many tree islands. There also are likely to be submerged sites along the Gulf Coast that were inundated by rising seas centuries ago. The 1968 finds in Taylor Slough suggest the presence of additional buried or inundated inland sites.⁸³² Going forward, there undoubtedly will be additions to the park’s list of prehistoric sites.



Figure 17–3, archeological site work

⁸³² Griffin, *Synthesis*, 180, 325–26; Margo Schwadron, personal communication, Aug. 23, 2013.

Historic Period Archeological Sites

No systematic effort to identify historic period archeological sites within the park has been made.⁸³³ Many of the prehistoric archeological sites in the park also contain a historic period component. The aboriginal shellwork and midden sites along the coast were attractive homestead sites for white settlers who began to arrive in the nineteenth century. Some homestead sites are still marked by surviving cisterns, foundations, or citrus, coconut palm, or other nonnative species planted by settlers (figure 17–4, cistern at House Hammock). Many of these settlement sites are now recognized archeological sites. In the interior, the higher and drier portions of hammocks used by prehistoric people were used later by Seminole and white hunters and fishermen. A few historic period archeological sites, such as those at or near Flamingo or other sites of fishing activity in the park, are not necessarily associated with prehistoric occupation. Several forts constructed during the Second and Third Seminole Wars are known to have been located within the present park boundary (see Chapter 1). These include Fort Poinsett and Fort Cross at Cape Sable, Fort Henry, Fort Westcott, and Camp Moulder on Pavilion Key. To date, definitive locations of these installations have not been identified. If they are positively identified in the future, they could become recognized archeological sites. The sites of moonshine stills with some equipment have been discovered in the past and may be discovered in the future. These have the potential to become recognized archeological sites. The site of the long-abandoned tannin factory on Shark River mentioned in Chapter 1 contains deteriorating boilers, piles of milled lumber, and some post and wall remains (Figure 17–5, remains of a tannin factory in park). It is a recognized archeological site.⁸³⁴



Figure 17–4, cistern at House Hammock

⁸³³ Melissa Memory, personal communication, June 26, 2013.

⁸³⁴ Paige, 212–14; James Hammond, *Florida's Vanishing Trail* (N.p.: printed by author, 2008); Paul O'Dell, personal communication, June 29, 2013; Everglades National Park Archeological Sites Management Information System (ASMIS) database.

Archeology National Register Listings

Griffin's 1988 synthesis observed that the entire park might justifiably be included in a National Register archeological district. More practically, he recommended that the Shark River Slough and Ten Thousand Islands be registered as districts. In 1996, a multiple property nomination was prepared to provide contexts and registration requirements for sites and districts within the park. In November 1996, the multiple property nomination and nominations for four districts and three sites were accepted by the Keeper of the National Register. The Shark River Slough District contains sixty-two discontinuous sites, and the Ten Thousand Islands District contains seventy scattered sites. The following are the National Register listings for Everglades National Park:



Figure 17-5, remains of a tannin factory in park

Bear Lake Mounds Archeological District
Monroe Lake Archeological District
Shark Valley Slough Archeological District
Ten Thousand Islands Archeological District
Anhinga Trail
Cane Patch
Rookery Mound
Turner River

As mentioned in Chapter 1, the Mud Lake Canal is a very important and unusual example of aboriginal engineering. In recognition of its national significance, the Mud Lake Canal

in September 2006 was designated a National Historic Landmark.⁸³⁵ At 3.9 miles, the canal is one of the longest known prehistoric canals anywhere within the U.S.; as of this writing it is the only one recognized as a National Historic Landmark. On December 2, 2007, the park held a dedication ceremony marking this designation.⁸³⁶

Historic Structures

Early NPS policy at Everglades was to protect structures, such as shell mounds and canals, dating to the prehistoric period; the NPS either eliminated or neglected structures from the historic period. This approach was typical of the 1950s and 1960s, when the historic preservation community in general had little interest in vernacular buildings and buildings from the more recent past. In addition, before passage of the National Historic Preservation Act of 1966, the NPS lacked guidelines and procedures for evaluating and protecting historic properties. Leaving aside Native American structures, no structures in the park had been erected before the 1880s at the earliest, and all were modest buildings. At establishment, known structures in the park included Royal Palm Lodge and its outbuildings and designed landscape, the fishing village at Flamingo, buildings associated with commercial fishing at Snake Bight and Lostmans River, Dr. Lunsford's house and air strip at Cape Sable, and the dwelling sites of early twentieth-century settlers on keys and areas of high ground on the Gulf coast. The two-story, frame Watson house on Chatham River was the most substantial settler's house standing at the park's establishment. Many of the white homesteads were on existing Native American platforms and mounds. The NPS clearly saw the prehistoric Native American use as more significant than any subsequent historic use. Some staff likely believed that it would be easier to interpret the prehistoric period without the evidence of later occupation. The park's 1967 resource management plan summed up the prevailing attitude. The management objective for "physical evidence of human occupation of islands and keys" was stated as "obliterate all evidence of man's activities except in those areas dedicated to visitor use." The park's 1981 backcountry management plan noted that the only existing historic building in the park was the Royal Palm deer feeding station. It added:

⁸³⁵ The National Historic Landmark program, authorized by the Historic Sites Act of 1935, recognizes properties that are significant to the nation as a whole. As of this writing, only some 2,500 properties have received landmark status. The National Register of Historic Places was created by the National Historic Preservation Act of 1966. National Register properties may be significant at the local or state level as well as the national level. Currently, there are 80,000 National Register listings, representing 1.4 million individual properties. Many National Register listing are districts, which can embrace dozens or hundreds of individual properties.

⁸³⁶ National Register of Historic Places, Mud Lake Canal National Historic Landmark Nomination, Sept. 20, 2006, NR 06000979.

“All other buildings have been obliterated by hurricanes and other natural causes and remaining portions are not being maintained.”⁸³⁷

The statement in the backcountry management plan and similar statements in other park documents, such as the 1986 historic resource study, gloss over the fact that the NPS worked actively to remove traces of nineteenth- and twentieth-century settlement. The park’s razing of buildings at Flamingo in 1951 is covered in Chapter 6. Superintendent Beard did allow former residents to remove scrap iron, wrecked automobiles, and other salvageable material (figure 17–6, artifacts from the fishing village at Flamingo). When Dr. Lunsford’s property was obtained through condemnation, the park cleared away all his improvements. In summer 1952, park rangers burned the Braddock and Smith houses on Chatham River; an “old fisherman’s shanty” on Trout Creek met a similar fate in 1954. In fall 1957, the park burned a Flamingo house that had been kept as an exhibit. Hurricane Donna in 1960 damaged or destroyed many buildings. The storm severely damaged the old Irwin House at Flamingo and its remains were removed. Ranger Richard Stokes reported that Donna had “almost completely destroyed” the Watson House on Chatham River and washed away structures that he called shacks on Turkey, Rabbit, Mormon, and Pelican Keys. Ed Braddock of Miami had been using the Watson Place as a base for sportfishing up until spring 1960, when the park declined to renew his special use permit. After Hurricane Donna, the NPS removed the remains of the house, but landscape features remained. Sportswriter Red Smith observed “the overgrown ruin of an estate in 1964.” In 1983, Chester Obara, the outdoors editor of a Florida newspaper, noted only parts of Watson’s moonshine distillery remaining.⁸³⁸



Figure 17–6, artifacts from the fishing village at Flamingo

⁸³⁷ Resources [sic] Management Plan, Everglades National Park, Feb. 1967, approved by Acting Dir. Harthan Bill, March 26, 1968, EVER 42242, ser. IV., sub. A, ss. 2; ENP, *Backcountry Management Plan*, July 1981, 22.

⁸³⁸ Alone among NPS officials, land acquisition officer A. B. Manly believed the Watson Place had historic significance. SMR, Nov. 1951, Aug. 1952, Feb. 1954, Oct. 1957, Dec. 1960; District Ranger Stokes to Chief Ranger Nelson, Nov. 19, 1959, Supt. Hamilton to G. J. Missio, May 13, 1960, District Ranger Stokes to Supt., Oct. 9, 1960, EVER 22965; Supt. Joseph to RDSE, Nov. 12, 1964, NARA Ph, RG 79, 79–69–5662; Red Smith, “The Everglades: An Emperor and Crow Rule Roost,” *New York Herald Tribune*, Mar. 10, 1964; Chester Obara, “First Work the Bugs Out of Everglades,” *St. Petersburg Independent*, Dec. 15, 1983.

Few NPS officials or staffers in the early decades believed that structures from the recent past were worthy of preservation. An exception is a recommendation from the park's 1957 research conference to "preserve and mark historic sites, including the Flamingo village site." There is no evidence that this recommendation received serious consideration.⁸³⁹

Royal Palm State Park

As has been recounted in Chapter 7, the park used the Royal Palm Lodge as a ranger station and visitor contact point until 1951. In that year, the NPS completed a new visitor center several hundred yards away at the start of the Anhinga Trail. The lodge was sold the next year and removed from the park in two sections. The park did not consider the outbuildings or designed landscape from the state park to be worth preserving. The CCC-era garage and the old park caretaker's house were removed in August 1959 (figure 17-7, CCC-built garage at Royal Palm). In 1977, the foundations of the lodge were reported as still being visible. The stone deer feeding station/pump house was described as "in fairly good condition except for the doors which are beginning to rot." No maintenance of this structure had been performed as of 1977, but a draft plan for historic resources management expressed the intention to remove vegetation periodically and treat the doors.



Figure 17-7, CCC-built garage at Royal Palm

⁸³⁹ NPS, "Report of Proceedings, Everglades National Park Research Conference, June 6-8, 1957," NARA Ph, RG 79, 79-68-A-2955, box 48.

As of this writing, the deer feeding station is the only building at Royal Palm that still stands. In the winter of 2010/11, a park volunteer, Laura Marquardt, documented a number of landscape features at Royal Palm. These included building foundations, pond remnants, and introduced plantings of orange trees, royal palms, and philodendron. A 2000 draft National Register of Historic Places nomination for the Ingraham Highway (see next section) did not evaluate the remains of the cultural landscape at Royal Palm. Everglades National Park has prepared a project, now awaiting funding, to document and evaluate the cultural landscape at Royal Palm.⁸⁴⁰

Ingraham Highway and Associated Canals

As related in Chapter 1, Ingraham Highway was constructed from Homestead to the vicinity of Coot Bay, with a spur road to Flamingo, between 1915 and 1922. To provide fill for the roadbed, the Homestead Canal was dredged adjacent to the highway. Additionally, several canals, including the East and Middle Cape Sable Canals and the Flamingo (Buttonwood) Canal were dug to drain the coastal prairies. While the NPS was building the portion of the main park road that swung along the northern edge of Long Pine Key, Ingraham Highway remained the only way to reach Coot Bay and Flamingo. The NPS incorporated most of the last seventeen miles of Ingraham Highway as part of the main park road, paving it with asphalt for the first time. When the main park road opened in 1957, the park blocked Ingraham Highway where it intersected the new road near Sweet Bay Pond and obliterated some 3.4 miles of the old road. Approximately 6.5 miles of the highway remained in use by farmers in the Hole-in-the-Donut and as administrative roads. Fewer than five miles of the roadbed were released to succession. In the 1990s, a total of about 2,900 feet of the old highway lying between Royal Palm Hammock and the main park road were obliterated to enhance water flows in Taylor Slough.⁸⁴¹

In 2000, historian Christine Trebellas of the NPS Southeast Regional Office prepared a draft National Register of Historic Places nomination for the Ingraham Highway. This provided a historic context that focused on the political and engineering history of the highway. A June 2009 cultural resource assessment expanded on the draft nomination and included an assessment of the Homestead, East Cape Sable, and Buttonwood Canals.

⁸⁴⁰ SMR, Oct. 1952; NPS, Draft Historic Resources Management Plan for Everglades National Park, Feb. 1977, EVER 22965; Laura Marquardt, "GPS readings and description of discovered sites at Royal Palm," n.d. [2011]; Melissa Memory, personal communication, June 26, 2013.

⁸⁴¹ Christine Trebellas, Draft National Register of Historic Places Nomination, Ingraham Highway Historic District, 2000, ENP CR files; Environmental Assessment, Taylor Slough Bridge Replacement and Old Ingraham Highway Removal, Nov. 21, 1997, ENP Maintenance files; Mance Buttram, Christine Trebellas, Melissa Memory, and Laura Ogden, *A Cultural Resource Assessment of the Old Ingraham Highway and Homestead, East Cape Sable and Buttonwood Canals* (Homestead, FL: Everglades National Park, July 2009), 65, 69.

The cultural resource assessment documented the social history aspects of these features, traced the changes to them following park establishment, and included many drawings, maps, and photographs. The assessment concluded that the Ingraham Highway, the Homestead Canal, and the East Cape Sable Canal were potentially eligible under National Register Criterion A.⁸⁴²

Iori Farms

The Iori Farms warehouse and dormitory/commissary buildings, constructed in 1955, were extensively modified by the NPS before they were fifty years old. Because of the modifications to the buildings and the fact that the farming is no longer being done in the Hole-in-the-Donut, the Iori buildings do not convey their historic use and are not eligible for the National Register.

Mission 66 Structures

In 2012, the Florida Historic Preservation Office concurred that several Flamingo structures contributed to the significance of a National Register-eligible Flamingo Mission 66 Developed Area Historic District: the visitor center, service station, flagpole, concession warehouse, two four-unit apartment buildings, boat basins 1, 2, 3, and 4, the boat shelter, boat shop, and the fish cleaning building. The Florida SHPO deferred consideration of the eligibility of the Mission 66-era cultural landscape at Flamingo. A stated aim in the park's draft general management plan is to preserve, where feasible, the character-defining features of this landscape. A historic structure report for the Shark Valley Tower done under a contract concluded that the tower was eligible for the National Register. In 2012, the Florida SHPO concurred in a determination that the boat basin, seawall, visitor center, and three residences at Everglades City were not individually eligible for the National Register. In order to evaluate Mission 66 development more holistically, the NPS in 2013 contracted with Wiss, Janney, and Elstner Associates to prepare a National Register nomination for all of the Mission 66-era structures in the park. It is anticipated that the nomination will embrace Flamingo, Shark Valley, Pine Island, Everglades City, and park roads. As of this writing, a first draft of the Mission 66 nomination has not been prepared.⁸⁴³

⁸⁴² Buttram, Trebellas, Memory, and Ogden, 80–81.

⁸⁴³ Laura A. Kammerer, Deputy State Historic Preservation Officer, Florida Dept. of State, to Supt. Dan B. Kimball, ENP, Apr. 13, 2012, Laura A. Kammerer, Deputy State Historic Preservation Officer, Florida Dept. of State, to Supt. Dan B. Kimball, ENP, June 5, 2012, both in ENP Cultural Resource Division files; Wiss, Janney, Elstner Associates, Inc. "Shark Valley Tower. Historic Structure Report, 75 percent draft" (Atlanta: NPS, July 2012); Cynthia Walton, personal communications, Oct. 21, 2013, and Oct. 13, 2014; *Draft GMP*, 69.

Nike Base HM-69

As recounted in Chapter 22, the U.S. Army in 1965 constructed a Nike Hercules surface-to-air missile base on property in the Hole-in-the-Donut. The property was within the park's authorized boundary but not in NPS ownership at that time. The army deactivated the base in 1979 and turned it over to the NPS in the early 1980s. Before Nike missile base HM-69 became park property, the U.S. Army removed the missiles and radar towers. The NPS retained most of the structures associated with the launch area and almost all of those associated with the administration area. At the launch area, the ready building, part of the kennel building and a number of utility buildings were removed, and the borrow pit was filled in. The missile shelters, berms, and missile assembly buildings remain (figure 17–8, Nike Base HM-69, aerial view of the launch area). The sentry box at the administration area was removed, and the roof of the administration building was replaced following Hurricane Andrew. In July 2004, Nike Missile Site HM-69 was placed on the National Register of Historic Places. It was registered as a district containing the same acreage as the special use permit granted to the army, with twenty-two contributing buildings and structures. In recent years, the park has offered guided tours of the base, which have proven very popular with visitors.⁸⁴⁴



Figure 17–8, Nike Base HM-69, aerial view of the launch area

⁸⁴⁴ National Register of Historic Places, Nike Missile Site HM-69 National Register of Historic Places Nomination, July 27, 2004, NR 04000758.

Coopertown

Three brothers from Missouri, John, James T., and Marion Cooper, opened various retail establishments in the late 1940s on the south side of the Tamiami Trail three miles west of Krome Avenue. Cooperstown has been in continuous operation since then, offering airboat tours, a restaurant, and a gift shop. The Florida State Historical Preservation Office has determined that Coopertown is eligible for the National Register of Historic Places.⁸⁴⁵

Hammock Camps in the East Everglades Addition

As part of the East Everglades expansion, the NPS acquired a number of hunting and airboat camps located on tree islands. The camps were established in the decades following World War II and contain functional wood-frame buildings typically constructed from plywood, corrugated metal, and rolled asphalt. Many of the camps are superimposed upon sites of historic period Indian occupation and prehistoric Native American occupation. A 2004 assessment of the camps concluded that only one, the Duck Club property, formerly used by the Miami Rod and Gun Club, was potentially eligible for the National Register of Historic Places. The park has proposed projects, as yet unfunded, to plan for the preservation and interpretation of the hunting camps and other cultural resources associated with the tree islands in the East Everglades addition.⁸⁴⁶

Cultural Landscapes

The park has a number of cultural landscapes, or remnants of them, dating to prehistoric and historic times. At present, two landscapes have completed listings on the NPS's Cultural Landscape Inventory: the Mission 66 developed landscape at Flamingo and the landscape created by the U.S. Army at the HM-69 Nike Missile Base. The National Register documentation currently being prepared for the park's Mission 66-era resources will address landscape features. The park has proposed a project, to date unfunded, to prepare a cultural landscape report for the NPS's maintenance and residential area at Pine Island. Almost all traces of the cultural landscape associated with the fishing village of Flamingo have been obliterated. Remnants of cultural landscapes, cisterns or foundations for example, exist at other sites of white settlement within the park. The designed landscape at the former Royal Palm State Park is largely overgrown, and the only remaining building is the deer-feeding station. Foundations of buildings and examples of plantings introduced during the state park period survive at Royal Palm.⁸⁴⁷

⁸⁴⁵ Coopertown website, <http://coopertownairboats.com/index.html>.

⁸⁴⁶ Brian Coffey, NPS SERO, "Trip Report—Everglades Camps," December 2004, copy in files of Everglades National Park Cultural Resources Division; NPS PMIS project statements 139482 and 198743.

⁸⁴⁷ David Hasty, SERO, personal communication, June 18, 2014; NPS PMIS project statement 206373, Prepare Cultural Landscape Report of Pine Island Landscape with CLI, FMSS, GIS and IRMA Data.

Ethnographic Resources

Ethnographic resources are cultural or natural resources that possess significance for cultural groups. Examples range from natural features that have spiritual significance to Native American groups to plants, such as the saw palmetto that have practical use as building material for both Native American and white settlers of the Everglades region. In the Everglades, a host of plants, animals, and geographic features are potentially significant ethnographic resources. Professor Laura Ogden and Melissa Memory, then chief of cultural resources at the park, prepared a draft *Ethnographic Assessment and Overview for Everglades National Park* in the 2010s, but it has not been put into final form. The U.S. Army Corps of Engineers commissioned a study of traditional cultural properties associated with the “Modern Gladesmen Culture,” published in 2011. Many of the tree islands in the East Everglades expansion area were occupied by Indians and whites during the historic period, and many in recent decades having been used as hunting camps. The park has a proposed project, which awaits funding, to prepare a plan for the preservation and interpretation of the East Everglades cultural and ethnographic landscape. The preferred alternative in the park’s draft GMP calls for better protection and interpretation of park ethnographic resources.⁸⁴⁸ The long-established use of the Everglades by Native Americans is described in Chapter 19.

⁸⁴⁸ Laura Ogden, personal communication, June 30, 2014; NPS PMIS project statement 139482, Preservation and Interpretation Plan for East Everglades Cultural and Ethnographic Landscapes; *Draft GMP*, 65; Greg Smith. *You Just Can’t Live Without It: Ethnographic Study and Evaluation of Traditional Cultural Properties of the Gladesman Culture, Comprehensive Everglades Restoration Plan (CERP), Southern Florida* (St. Augustine, FL: New South Associates, 2009), http://www.evergladesplan.org/pm/pm_docs/master_rec_plan/062909_gladesmen_study_draft.pdf.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 18:
Museum Collection and Library

Chapter 18: Museum Collection, Library, and Records Management

From the park's establishment in 1947 until the 1980s, its museum program received little attention and very limited resources. The park has had a trained curator only from 1987 to 1993 and again starting in 2002. The absence of a well-funded, professional museum program for the majority of the park's history has had unfortunate consequences. The park missed out on opportunities to acquire the papers of individuals, such as Marjory Stoneman Douglas and John Pennekamp, who were closely tied to its past. Also forfeited was the chance to collect items connected to historical activities, such as alligator hunting, commercial fishing, tomato farming, and tanbark processing. By the late 1980s, Everglades National Park had a considerable history of storing museum items from other Florida parks. The park's more formal role as a multi-park repository began with the formation of the Everglades Regional Collection Center in 1987. This later evolved into the South Florida Collections Management Center.⁸⁴⁹ The center and its staff are physically located at Everglades National Park. The center serves four other park units in addition to Everglades; this chapter will focus on the Everglades collections. Because the operations of the center affect other aspects of Everglades National Park, notably space allocation, some description of the center's overall functions and operations is included.

Early Collection Efforts

Although decades would pass before the park had a professional museum program, it was acquiring museum collection and library items almost from the beginning. In August 1948, for example, Former Congressman J. Mark Wilcox gave the park press clippings and some other materials that had been in the files of the Everglades National Park Association. The park gradually began assembling a library, a photograph and slide file, and a collection of natural history specimens. Park collaborator Frank Craighead, park biologist Bill Robertson, and park naturalist Willard Dilley began an important herbarium collection in the 1950s. For several decades, little distinction was made between the library and the museum collection and both were kept in the same space. In addition, the available records indicate that the terms "museum collection" and "study collection" were used interchangeably. It is likely that the park staff had little idea what it intended to retain permanently as a museum collection and what it kept for consumptive use by naturalist/interpreters. Further, the park made no serious effort to place retired files into an archival collection for several decades. Items continued to accumulate in the 1950s

⁸⁴⁹ The center holds and manages museum collections for Everglades National Park, Dry Tortugas National Park, Biscayne National Park, Big Cypress National Preserve, and DeSoto National Memorial.

and 1960s, including some extensive collections of *Liguus* tree snail shells and some personal items that had belonged to Audubon warden Guy Bradley.⁸⁵⁰

The park library and collections were kept at park headquarters on Krome Avenue in Homestead until 1961, when they moved to the new park headquarters building just inside the park entrance on Parachute Key. By 1967, the park reported having a library/museum collection of some three to four thousand items, which included an extensive pamphlet/reprint file, the herbarium, other natural history specimens, and a few historic and archeological artifacts (Figure 18–1, American crocodile skull). All were housed in air-conditioned space in the park headquarters, never exceeding 730 square feet. The park’s chief naturalist was responsible for the collection/library and was able to keep a museum technician on staff for a portion of the 1960s. In this period, the Everglades Natural History Association funded book purchases and at times paid the salary of a part-time librarian.⁸⁵¹



Figure 18–1, American crocodile skull

Considerable delays and lapses in accessioning items to the museum collection were routine well into the 1980s. In January 1949, the Seminole dugout canoe discovered by Daniel C. Beard, the superintendent’s son, became the first item accessioned into the park collection. No record of accessions of any kind have been found for the period May 11, 1959, to July 1, 1982, leading to speculation that an accession book kept in that interval may subsequently have been lost.⁸⁵²

⁸⁵⁰ J. Mark Wilcox to Thomas J. Allen, RDR1, n.d. [Aug. 1948], CP, EVER 22649; NPS, *South Florida Parks Museum Collection Management Plan* (Homestead, FL: 2008) (hereafter *SFPMCMP*), 9–10; SMR, May 1964.

⁸⁵¹ Supt. Beard to Dir., June 18, 1956. NARA Ph, RG 79, 79–62-A-305; SMR, Jan. 1959; Supt. Allin to Dir., Oct. 10, 1967, Mary Ann H. Ogden, “Museum Collection, Everglades National Park,” June 15, 1977, EVER 22965.

⁸⁵² *SFPMCMP*, 8–11; SMR, Jan. 1949.

During the 1970s and 1980s, park management seemed largely unaware of the importance of the park's library and museum collections. Recommendations from a park library task force appointed in 1972 were mostly ignored. When Park Librarian Alcyone Bradley and Park Chief Naturalist George Robinson in 1974 asked for additional space for the library (which still included the museum collections), the assistant superintendent responded: "[W]e cannot provide additional library space now or in the foreseeable future because of problems that would be created in other phases of operations of a more serious nature than those associated with the library." He suggested that Robinson limit the acquisition of new library materials, get rid of obsolete materials, and consider microfilming some materials. The story was much the same in 1982 when Superintendent Jack Morehead noted that the park's collections were not used enough to warrant training or recruiting personnel to manage them. Morehead suggested to his regional director that the park's museum collections be disbanded. He recommended that the parks' collections be disbursed among other NPS installations and local universities or turned over to the park's research center and interpreters for consumptive use.⁸⁵³

Following the establishment of the South Florida Research Center, the park's library and museum collection moved in October 1977 from headquarters to the research center in the former Iori bunkhouse (now the Dr. Bill Robertson Jr. Center). The collection got a little more space in the remodeled building, 1,030 square feet, but less than the 1,500 square feet considered adequate by the NPS Library Services Division. Items moved to the center included about 6,000 bound volumes, some five to six thousand pamphlets and reprints, what was described as a "biological study collection," slides, and photos. Responsibility for the collection shifted from the interpretative division to the director of the research center, and interpretation kept a small library for its use at headquarters. Biologist James Kushlan, who came to Everglades National Park in 1975, believed that the main library housed a good collection of South Florida materials. In 1983, Lead Park Technician Bobbie Pettit-Tilmant was assigned curatorial responsibilities as a collateral duty; it is not known how long she remained in that capacity.⁸⁵⁴

Throughout much of this period, the park had a library committee that made recommendations for the library/collections. The committee tried to make improvements, but achieved little. In 1982, in response to the superintendent's desire to disband the collection, a team headed by Regional Curator H. Dale Durham visited the park to study

⁸⁵³ Handwritten note from asst. supt. on memo, Chief Naturalist Robinson to Supt., Sept. 12, 1974, Supt. Morehead to RDSE, Feb. 12, 1982, EVER 22965; *SFPMCMP*, 15.

⁸⁵⁴ Chief, Field Library Services, to Dir., Office of Library and Information Services, WASO, June 4, 1976, EVER 22965; R. Alan Mebane, Chief of Interpretation, to Patricia Wickman, Museum of Florida History, Mar. 18, 1985, EVER 22965; SAR, 1983, 1984; James Kushlan, interview by author, May 25, 2012; Sandy Dayhoff, interview by Bridget Beers, Apr. 6, 2001.

the needs of its museum program.⁸⁵⁵ The team's report identified a number of deficiencies, notably in the areas of oversight, accountability, coordination with research staff, and procedures for processing collections. Among the team's recommendations, which were endorsed by the Southeast Regional Office, were:

1. returning responsibility for the collections to the interpretative division;
2. moving the entire collection to Nike Missile Base HM-69 headquarters building (now the Dan Beard Center);
3. a complete inventory of the collections;
4. preparation of a scope of collections statement;
5. preparation of a policy on the use of collections; and
6. improved environmental control of collections.

In 1984, the collections moved from the Robertson Building to the Beard Center and once again became the responsibility of the interpretive division. Most of the Beard Center became the new home of the South Florida Research Center. In 2002, space in Robertson was being used for archival storage, indicating that some material remained there after the 1984 move or was later placed there (Figure 18–2, archival storage room in the Robertson building, 2002). It is likely that in the 1984 and earlier moves of the collection, items were discarded to make the moves easier. The Durham team's visit also resulted in the regional curator and the WASO Natural Science Division putting on a training course at the park, which accomplished some basic museum tasks. Compiling an inventory and improving environmental conditions would have to wait another thirty years. The scope of collections statement, approved in March 1985, made some additional recommendations, namely that the park separate its museum collection from its library and that the park's archeological artifacts be moved to the Southeast Archeological Center in Tallahassee.⁸⁵⁶

In 1992, Hurricane Andrew caused considerable destruction at Everglades National Park. As a result, the 1961 main visitor center had to be demolished. A hurricane salvage team, made up of Kent Bush, Dale Durham, and Jonathan Bayless, recommended that the Bernard Thomas mural painting from the visitor center dating to the late 1960s be removed and evaluated by a conservator. See Chapter 20 for details on the commissioning of this painting. The team did not remove the painting from the wall, apparently because of concerns that the wall contained asbestos. Sometime later, the painting was taken down by others, cut into two pieces, rolled up, and removed to

⁸⁵⁵ Assoc. RDSE, Operations, to ENP Supt., Oct. 25, 1982, EVER 22965. The other members of the team were Arthur Allen, Chief, Division of Museum Services, Harper's Ferry Center, and Christine Schonewald-Cox, Biologist, Natural Science Division, WASO.

⁸⁵⁶ Assoc. RDSE, Operations, to ENP Supt., Oct. 25, 1982, ENP Scope of Collections Statement, Mar. 25, 1985, EVER 22965; *SFPMCMP*, 16.

museum storage. In 2011, a conservator treated the painting, stabilizing paint that had flaked and lifted, and mounting it on a backing cloth. The park hopes to find a suitable future exhibition location for this twenty-two-foot-long mural. Hurricane Andrew did not affect the museum program's spaces at the Beard Center as severely other parts of the building; water damage was largely confined to the wet specimen room.⁸⁵⁷ The loss of electrical power did lead to some mold growth in collection storage areas. Park staff discarded significant amounts of water-damaged files and other material from research offices in the building as well as microfilm and perhaps other material from the park library. No formal process guided this activity. The "loss of administrative record and research data from Hurricane Andrew was significant."⁸⁵⁸



Figure 18–2, archival storage room in the Robertson building, 2002

⁸⁵⁷ In 1992, the museum program had in place a supposedly hurricane-reinforced Bally® modular building awaiting the transfer of collections materials. Nothing had been moved into the building because of problems with its floor. This proved fortunate because Hurricane Andrew flattened the building. Nancy Russell, personal communication, June 26, 2013.

⁸⁵⁸ SFCMC, FY 2011 & FY 2012 Annual Reports (Homestead, FL: SFCMC, Sept. 30, 2012) (hereafter FY11 and FY12 AR), 30; Nancy Russell, personal communication, Sept. 28, 2012, and June 26, 2013; *SFPMCMP*, 16, 71–72, quotation from 16.

In 1996, the park partnered with Florida International University and a number of other organizations to create the Everglades Digital Library (EDL). A service of the Digital Collection Center at Florida International University Libraries, the EDL is an ongoing effort to make primary source material concerning the Everglades easily available over the Internet to support research, education, ecosystem restoration, and resource management. Material from a number of repositories, including the Everglades Regional Collection Center at Everglades National Park, was digitized. Only a small fraction of the material housed at Everglades National Park, mainly some archival items and photographs, was placed online.⁸⁵⁹

The Beginnings of a Multi-Park Approach

In April 1987, the Everglades Regional Collection Center (ERCC) was formed to take responsibility for the museum collections of all four South Florida NPS units: Everglades, Fort Jefferson, Biscayne, and Big Cypress. The exact history is obscure, but it is clear that materials from Fort Jefferson were housed at Everglades National Park from the early 1960s and materials from Biscayne from the late 1970s. The superintendent's annual report for 1987 indicates that 1,700 square feet in the Beard Center was allotted to the ERCC. A GS-7 museum technician position was also established at this time. The ERCC was made formal in 1990 with the adoption of "Protocols for the Everglades Regional Collections Center." The stated goal of the ERCC was "to provide centralized collections management services for the natural science and cultural collections of the four South Florida park units." In this same period, Superintendent Michael Finley decided to shift responsibility for the library/collections to the South Florida Research Center. When Finley hired Michael Soukup as center director in 1989, he told him he would have responsibility for the library/collections and resource management, without any increase in the center's budget.⁸⁶⁰

The park hired Jonathan Bayless into the newly created museum technician position in 1987. He was soon promoted to museum curator, and Dan Foxen was hired as the technician. Bayless moved to remedy some of the program's deficiencies, making some progress on the backlog of unaccessioned items, purchasing needed museum furniture and equipment, and installing a new security system. He also assembled a team to prepare a collection management plan (CMP), which was approved in 1989. The CMP endorsed the concept and mission of the ERCC and recommended that the three other parks make an annual contribution of \$3,000 to the center. When Bayless left the park in 1991, Foxen became curator, while the museum technician position remained vacant. Foxen stayed on

⁸⁵⁹ Everglades Digital Library, <http://everglades.fiu.edu>; "At Last, There's an Everglades without Mosquitoes," *Miami Herald*, May 26, 1997.

⁸⁶⁰ SAR, 1987; Michael Soukup, interview by author, July 25, 2012; *SFPMCMP*, 12–13.

as curator only until spring 1993, and the position was vacant until 1995. At that time, Walter Meshaka, a herpetologist, was hired as curator. In 1999, the park created a planning and compliance branch, and Meshaka was placed under that branch. The following year, 2000, Meshaka left the park, leaving the curator position vacant until summer 2002.⁸⁶¹

Brien Culhane, chief of the newly formed planning and compliance branch, was able to hire Nancy Russell as park curator in August 2002. Because Russell was the only person in the park with cultural resource experience, more and more of the workload related to historic structures, archeological resources, and the like was assigned to planning and compliance. Finding this increasingly untenable, Culhane and Russell began to lobby park management to create a cultural resource chief position. This was met with some resistance at first, but once elevated from acting superintendent to the superintendency in 2006, Dan Kimball approved the establishment of the park's cultural resource management division. The museum function then moved from planning and compliance to the new division. Melissa Memory was hired as the first chief of culture resources and remained in the position until summer 2013.⁸⁶²

A New Direction

As of late 2002, the museum program at Everglades National Park had suffered from decades of understaffing, underfunding, and neglect. The backlog of unaccessioned and uncatalogued items was large; physically the collection lacked adequate space and was poorly protected; accountability for the collection was deficient; and for decades park staff had enjoyed access to the collections without any monitoring or controls. Curator Russell began working to revitalize the multi-park approach, provide a clear direction for the center, and begin to bring it up to NPS standards. One of her first moves was to change the center's name. In 2003, the Everglades Regional Collection Center became the South Florida Collections Management Center (SFCMC). The new name emphasized that the center served multiple parks and that henceforth, collections would not just be stored but actively managed. The 1989 collection management plan (CMP) was outdated, and Russell assembled a team headed by Allen Bohnert, regional chief of curatorial services, to prepare a new one. The CMP project team made two visits to South Florida in 2004 and produced a draft plan the following year.⁸⁶³

⁸⁶¹ SAR, 1988, 2006; *SFPMCMP*, iv, 12–13, 18–19; Nancy Russell, *SFCMC, South Florida Collections Management Center Five Year Accomplishment Review (FY 2003–FY 2007)* (Homestead, FL: SFCMC, Dec. 14, 2007) (hereafter *5-Year Review*), 2; Nancy Russell, personal communication, Aug. 10, 2014.

⁸⁶² SAR, 2006; Brien Culhane, interview by author, Oct. 7, 2011; Russell, *5-Year Review*, 2; Nancy Russell, personal communication, Aug. 10, 2014.

⁸⁶³ Other team members were Jonathan Bayless, Steve Floray, Paul Rogers, Brigid Sullivan, Robert Wilson, Heather Young, Donald Cumberland, and Carol Ash. *SFPMCMP*, 1; Russell, *5-Year Review*, 2.

After its first visit, the team developed three alternatives for a vision statement for the SFCMC. In July 2004, representatives of the four South Florida parks met and used a modified choosing-by-advantages process to articulate the center's vision and make other broad policy decisions. Getting the four parks together in this way was key to building support for the center's mission. The group strongly supported a centralized approach, affirming that the SFCMC "is the central museum services provider for the four South Florida NPS units." The group went on to adopt a mission statement and goals and objectives for the center. The mission was stated as acquiring, documenting, preserving, interpreting, researching, and making accessible the natural and cultural history of the four parks.⁸⁶⁴

The concept of a charter for the SFCMC grew directly from the CMP process. Biscayne managers involved in the process suggested a charter similar to the charters used by the service's inventory and monitoring networks. Approved in February 2005, the charter sets out the functions and organizational structure of the center and contains provisions designed to ensure that it is responsive to the needs of the park units served. The charter establishes a board of directors and a collections committee. Serving on the board are the three park superintendents, the SFCMC curator, and the Southeast Region's chief of museum services. The board provides guidance for and oversight of the center's operations and evaluates its performance. Having the superintendents on the board helps ensure their ongoing commitment to the center. The collections committee, made up of representatives appointed by the parks from relevant disciplines, provides technical assistance and advice to the curator. The charter also describes the duties of the SFCMC curator and the areas to be covered in the center's annual work plan and annual report. In fiscal year 2006, DeSoto National Memorial became part of the SFCMC, and an amendment to the charter was executed to reflect this.⁸⁶⁵

Since late 2002, the SFCMC curator and staff have made tremendous strides in putting the center and its collections on a sound professional footing. The accomplishments achieved in various program areas are described below.

⁸⁶⁴ *SFPMCMP*, 20–21. See the plan for a list of the goals.

⁸⁶⁵ *SFPMCMP*, 27; Charter of the South Florida Collections Management Center; Amendment One to Charter of the South Florida Collections Management Center.

Collection Storage and Protection

As of August 2002, conditions were abysmal at the Beard Center, the main museum storage area, and the Robertson Building, which held the archival collection and library. At the Beard Center, there were problems with condensation and mold growth from the heating, ventilating, and air-conditioning (HVAC) system; peeling paint; seepage from the concrete floor slab; improper storage of items; cockroach infestation; and general uncleanness (Figure 18–3, storage of wet specimens, 2002). At the Robertson Building, archival collections and library materials, some of the latter shelved and some boxed, shared space with non-museum researchers, stored equipment, and other uses. In some areas, boxed books were stacked floor to ceiling, and the bottom boxes had suffered mold growth.⁸⁶⁶



Figure 18–3, storage of wet specimens, 2002

The museum curator acted quickly to end the incompatible uses in the Robertson space. At long last, the library was physically separated from the museum collection. Library items were evaluated, with duplicate or extraneous items given to the Florida International University Library. The remaining library items were moved to the training room in the Beard Center. The library had been assembled largely to assist park science and was the responsibility of the SFNRC. In 2010, the SFNRC opted to give up the library, and the SFCMC lacked staffing to take it over. Consequently, when the Beard Center was remodeled in 2011, the library was dispersed. Park divisions were given first choice of materials, with any unclaimed items going to Florida International University.⁸⁶⁷

The removal of the library from the Robertson Center in 2002 and the relocation of the GIS function freed up additional space in that building for the archival collection, an archivist's office, and a desk for museum researchers. Over several years, staff added

⁸⁶⁶ Russell, *5-Year Review*, 17–19.

⁸⁶⁷ Nancy Russell, personal communication, Nov. 1, 2013. The library was intact when I began research for this history and it provided useful information. Its loss is regrettable.

additional compactor storage, new map cases, and fixtures that allowed framed works of art to be properly accommodated. In 2003, a security system was installed for the first time, and the Robertson museum space now has available a trailer-mounted generator and an emergency switch to transfer power when regular power service is interrupted.⁸⁶⁸

Natural history items and artifacts were stored in the Beard Center as of late 2002. Curator Russell's first office was inside the secured storage area. In 2004, an office was found for her just down the hall from storage. The Beard Center got a new security system in 2003 and an emergency transfer switch in 2006, allowing generator power to be used when needed. In FY 2007 and FY 2008, a \$260,000 rehabilitation of the collection storage space in the Beard Center took place. This work required that the entire collection be temporarily relocated. The overall goal of the rehabilitation was to provide a tighter shell for the 1,800 square foot storage space by replacing the HVAC ductwork, adding a new ceiling and lighting, installing a plastic vapor barrier to the walls and a chemical vapor barrier between the floor slab and a new poured epoxy floor (Figure 18–4, preparing for the rehabilitation of Beard Center space). A \$30,000 compactor storage system was installed after the rehabilitation while the space was empty. The compactor system increased the space available for the natural history collections, and the center purchased new museum furniture for these items. In 2009, the curator was given a new office, and the space she had been using since 2004 was devoted to overflow collection storage (Room C). In late 2013, the SFCMC took over the former conference room in the Beard Center for collection storage. The SFCMC is glad to get any additional space that it can, but receiving space piecemeal here and there is not cost-effective.⁸⁶⁹



Figure 18–4, preparing for the rehabilitation of Beard Center space

⁸⁶⁸ Russell, *5-Year Review*, 18–19; Bonnie Ciolino, personal communication, June 26, 2013; Nancy Russell, personal communication, June 26, 2013.

⁸⁶⁹ Nancy Russell, personal communication, Nov. 1, 2013; Russell, *5-Year Review*, 17–19; SFCMC FY 2008, FY 2011, and FY 2012 Annual Reports, South Florida Collections Management Center (Homestead, FL: SFCMC, June 12, 2008), 39–59. Appendix A of the 2008 report provides a more detailed account of the rehabilitation of the Beard Center collections space.

Collection Size and Accountability

A basic task facing the SFCMC staff was determining just what was in the museum collection and where it was located. Previous staff had not followed standard museum practices in defining locations, so merely locating material was a challenge. Much material lay unaccessioned and uncatalogued. In particular, the vast majority of the hundreds of thousands of archival items were not catalogued (Figure 18–5, storage of audio-visual materials, 2002). A first step was compiling a 100 percent inventory of all material in the collections, and this task was accomplished in stages over six years. In FY 2003, the center’s best estimate was that the Everglades collection had 1,334,969 items, some 247,000 of which were archeological artifacts and related documentation housed at the Southeast Archeological Center (SEAC). For all four parks, the estimate was 3.5 million items, 1.7 million of them at SEAC. Because of the history of incorrectly accessioning collections and the failure to accession collections, there was not a lot of confidence in these estimates. By FY 2012, Everglades had 2,948,695 items. This increase of more than 1.5 million items consisted mostly of archival materials that had been accumulating for decades in various park divisions, but had never been turned over to the collection.⁸⁷⁰



Figure 18–5, storage of audio-visual materials, 2002

⁸⁷⁰ *5-Year Review*, 10, 15; FY11 and FY12 Annual Report, 49; Nancy Russell, personal communication, June 26, 2013.

The SFCMC staff began the work of accessioning and cataloguing the material in the collections. Much of this was accomplished through term employees, interns, and some volunteers. A snapshot of the progress made is indicated in the tables below.

Total Number of Accessions, FY 2002—FY 2012

Fiscal Year	Everglades	SFCMC
2002	599	816
2007	1375	1924
2012	1907	3008

Total of Catalogued Items, FY 2002—FY 2012

Fiscal Year	Everglades	SFCMC
2002	733,386	1,363,841
2007	936,456	2,000,640
2012	1,714,700	3,399,815

As of the close of FY 2012, 58.14 percent of the items in the Everglades portion of the collection had been catalogued. The vast majority of the uncatalogued material is archival.⁸⁷¹

Funding and Staffing

In FY 2003, the SFCMC received approximately \$80,000 in Operations of the National Park Service (ONPS) funding, generally known as base funding. In addition, it received about the same amount of funding for specific museum projects, known as PMIS (Project Management Information System) funding. This level of funding was wholly inadequate for the needs of the center, and the curator began working to achieve an increase in base funding and compete more successfully for project funding. Project funding showed a notable increase in FY 2005 and was between \$550,000 and \$648,000 for four of the five years from FY 2007 through FY 2011 (Figure 18–6, Jean Schardt providing conservation treatment on a bobcat specimen). The center received a substantial increase in base funding beginning in FY 2009, because of a notable collaborative effort involving DeSoto National Memorial. Parks prioritize their requests for base funding additions. At Curator Nancy Russell’s suggestion, DeSoto Superintendent Scott Pardue made a base increase for the SFCMC his top priority, recognizing that it would help four Florida parks as well as his. The result was a base increase of approximately \$374,000 for the museum program for the five parks. Some \$300,000 went to the SFCMC, with the remainder going to fund a new position at DeSoto. The SFCMC’s base funding reached \$295,000 in FY09 and \$394,000 in FY 2011. The superintendent of the smallest park involved in the

⁸⁷¹ *5-Year Review*, 9–13; FY11 and FY12 Annual Report, 49.

SFCMC in this instance recognized the large benefit that could be achieved by assigning his top priority to a collective effort rather than one that benefited only his park.⁸⁷²

The increased base funding has allowed the center to add to its permanent staff. As of August 2002, the SFCMC had just one full-time position, the GS-12 curator. As of this writing, the SFCMC has five base-funded positions: a curator, archivist, registrar, museum technician, and archives technician. The curator has made extensive use of project funding to fill term and temporary positions and has creatively employed students, interns, and volunteers. Volunteer hours have grown from 423 hours in FY 2003 to as much as 2,829 hours in FY 2007. Project funding has also permitted the hiring of contractors to address backlog cataloging and object conservation needs.⁸⁷³



Figure 18-6, Jean Schardt providing conservation treatment on a bobcat specimen

⁸⁷² Russell, *5-Year Review*, 4-5; FY11 and FY12 Annual Report, 11-13, 37-39; Nancy Russell, personal communication, June 26, 2013.

⁸⁷³ FY11 and FY12 Annual Report, 11, *5-Year Review*, 9.

Collection Access and Use

As more of the center's collections have been catalogued and provided with finding aids, they have become increasingly useful and utilized by park staff and outside researchers. The increased accessibility of the museum collection is reflected in a dramatic increase in NPS and external users. In FY 2002, the center handled eight requests for EVER materials from all sources, while in FY 2012, the center responded to 225 park and 86 external requests related to EVER collections. This represented 85.5 percent of the total park requests and 59.3 percent of the total external requests that the SFCMC handled. An important aspect of making collections more accessible is providing digital access. Since 2002, the center has made considerable progress in digitizing individually cataloged photographs, slides, specimens from the herbarium, and selected archival items from the Everglades collections.⁸⁷⁴

Oral Histories

A number of oral histories were present in the center on various media, mostly magnetic tape. The curator has been able to have a number of these transcribed, and has initiated a program of conducting oral history interviews with departing staff, former staff, and local residents. In October 2011, Everglades National Park hosted a forty-hour, service-wide workshop, "NPS Effective Oral History: Interviews, Project Management, and Practical Implications." Five SFCMC staff members participated.⁸⁷⁵

Permitting and Accessioning of the Results of Research

Every research permit issued by each of the South Florida parks should result in a museum accession. Even those research projects that do not generate specimens produce field notes, data, reports, and other archival material. Retention and proper curation of collection items produced by research projects are important to making the results of the research usable and accessible. Without a professional museum program for most of the park's history, important results from research projects have been scattered or lost forever. Prior to August 2002, the vast majority of research projects covered by permits were not being assigned accession numbers. Any data, reports, and specimens generated by these projects were not becoming part of the SFCMC collection and were generally not available to scientists or researcher in the future. The SFCMC has now become integrated with the NPS Research Permit Reporting System. The SFCMC curator succeeded in getting accession numbers assigned for all DRTO and EVER permits in 2003, and soon thereafter for the other parks. Not until 2010, when the center had funds to hire a registrar, was it able to systematically follow up and try to ensure that project-

⁸⁷⁴ Russell, *5-Year Review*, 20–21; FY11 and FY12 Annual Report, 1, 71.

⁸⁷⁵ FY11 and FY12 Annual Report, 44.

generated data, reports, and specimens actually got into the collection. In FY 2012, the center had 109 active permits with accession numbers, some 53 of which were for Everglades.⁸⁷⁶

The chronic failure to include the costs of curation in scientific and other research projects imposes a substantial burden on the SFCMC. It is NPS policy that each research project, whether in-house or permitted, include a line item in its budget to cover curation costs. This policy is widely disregarded, meaning that the SFCMC must come up with the funding and staff time to incorporate the research products into the collection. In this way, the backlog of the center continues to grow. Not only is this problematic for the center, but it makes the research efforts less useful than they could be because of unavoidable delays in making the research results available to users of the collection.

Conservation Projects

As previously mentioned, the Bernard Thomas mural received stabilization treatment in 2011. The center has undertaken a number of other conservation projects since 2002. These include treatment of damaged Everglades color slides and five original signs from the HM-69 missile base (Figure 18–7, Nike base warning sign in the South Florida Collections Management Center). The center has completed many conservation projects for other participating parks, details of which may be found in the SFCMC’s annual reports.⁸⁷⁷

Planning Documents

Under the curator’s direction, a number of museum planning documents were prepared and approved beginning in 2003, including:

- South Florida Parks Collection Management Plan (2008)
- Museum Storage Plan (2004)
- SFCMC Integrated Pest Management Plan (2009)
- Preventive Conservation Plan, including a Museum Housekeeping Plan (2007)
- SFCMC Archives Processing Manual (2008, with regular updates)
- SFCMC Archives Collection Condition Survey (2008)
- Scope of collection statements for EVER (2007), DRTO (2003), BICY (2007), BISC (2007), and DESO (2010)
- Museum Security and Fire Protection Surveys for EVER (2003) and BISC (2008)
- Museum Access and Use Policy for EVER/DRTO (2004), BICY (2007), BISC (2007), and DESO (2007)⁸⁷⁸

⁸⁷⁶ *SFPMCMP*, 91; FY11 & FY12 Annual Report, 53.

⁸⁷⁷ FY11 & FY12 Annual Report, 30; SFCMC FY 2009 Annual Report (Homestead, FL: SFCMC, Jan. 26, 2010), 34–35.

⁸⁷⁸ See Russell, *5-Year Review* and SFCMC annual reports for additional detail.

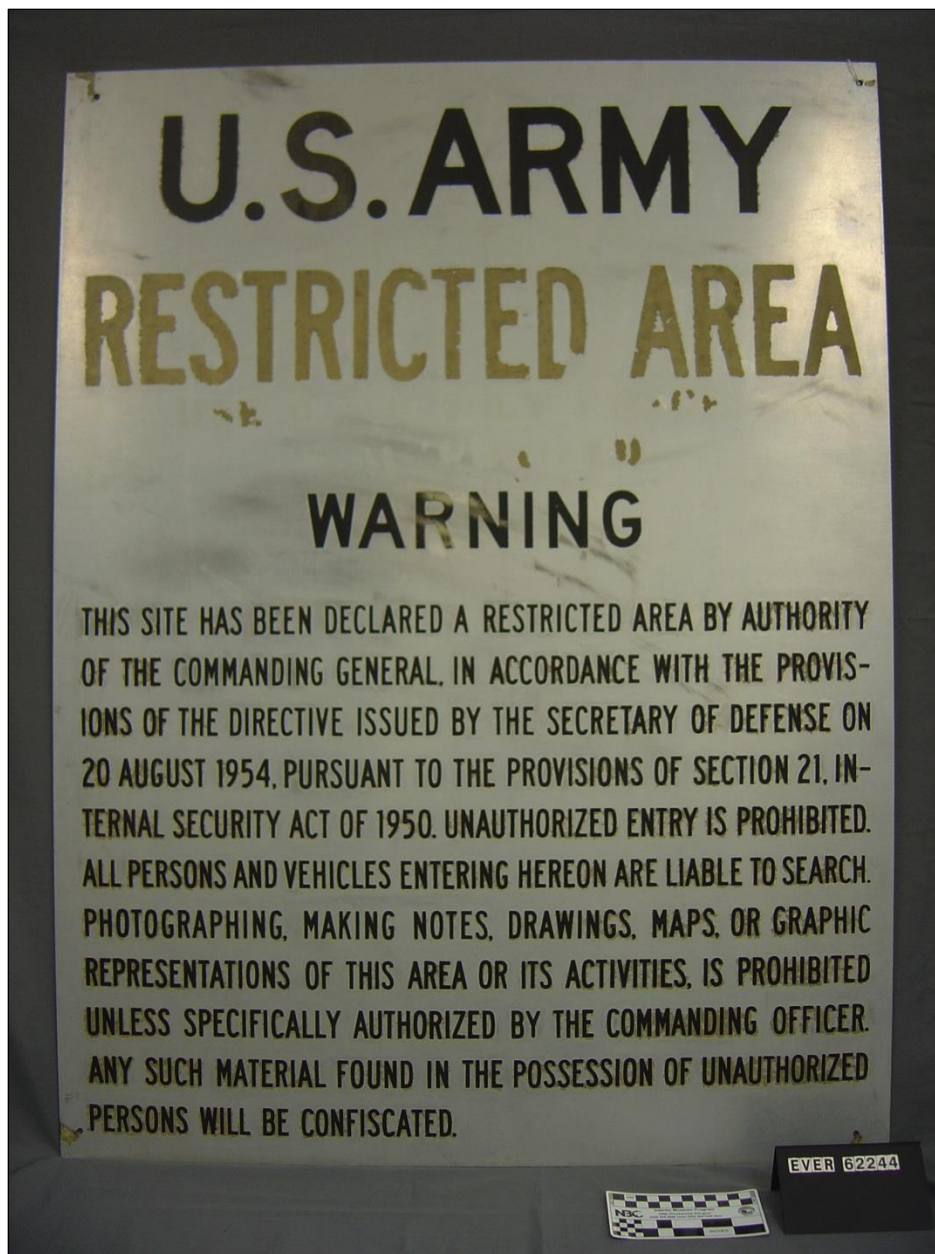


Figure 18-7, Nike base warning sign in the South Florida Collections Management Center

New Museum Storage Facility

The SFCMC has chronically been short of space, and the problem will only grow as the collections of the five parks grow. Meeting in 2004, the CMP team recommended that a new museum facility be constructed, noting that the existing spaces in Beard and Robertson were not large enough and did not meet NPS storage standards. In order to house existing collections and the anticipated growth over ten years, the team calculated that a facility of 11,500 square feet was needed. Even after acquiring additional space in the Beard Center, the SFCMC has less than 4,000 square feet available to it. The preferred alternative in the park's draft GMP calls for the construction of new museum along Research Road within the park.⁸⁷⁹ The new facility would:

provid[e] for public exhibits and a storage facility that meets NPS collections standards. Museum collections would continue to be acquired, preserved, and accessible to researchers, and the public would have its first opportunity to experience the center's vast resources and collections.⁸⁸⁰

⁸⁷⁹ *SFPMCMP*, 165–66.

⁸⁸⁰ NPS, *Draft GMP*, 68.

Records Management

Everglades National Park has never had a records management officer, and it appears that the NPS Southeast Region has not had one since its headquarters moved to Atlanta. Records management is not a museum program function; in practice at Everglades the responsibility devolves on to the administrative officer. Records are identified as temporary (with three-year or fifteen-year retention) or permanent. When no longer needed in the park, records are turned over to a federal records center managed by the National Archives and Records Administration (NARA). The NPS has an arrangement with NARA under which records related to natural and cultural resource management can be retained in park museum collections. This provides park managers with access to records documenting previous resource management decisions, as well as actions and events that have affected resources in the past.⁸⁸¹

At Everglades, those responsible for record disposition decisions often do not fully understand NPS policy. At times, this has resulted in records being destroyed that ought to have been retained. At the other extreme, some staff has sent records indiscriminately to the museum collection. This has forced museum staff to become de facto records managers, making decisions on temporary and permanent status, etc.⁸⁸² As the NPS moves more and more to electronic records, the need for the park to implement the NPS's 2010 Records and Electronic Information Management (REIM) policy is increasingly apparent and urgent.

⁸⁸¹ Nancy Russell, personal communication, Nov. 1, 2013.

⁸⁸² Nancy Russell, personal communication, Nov. 1, 2013.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 19:
Relationships with Cultural Communities

Chapter 19: Relationships with Cultural Communities

Native Americans

As described in Chapter 1, at the end of the Third Seminole War in 1858, some 100 to 150 Indians remained in South Florida. The U.S. signed no peace treaty with the remaining Seminoles and merely suffered them to remain in the area without according them any reservation land. For some decades, the Seminoles were able to range relatively freely in South Florida.⁸⁸³ They typically established temporary camps on hammocks, moving seasonally to the pinelands to hunt and deeper into the Everglades to fish and take birds for plumes and alligators for hides. Mostly they plied their cypress canoes on the lakes, rivers, and sloughs, as well as the canals made by prehistoric Indians. In addition to the food they got from hunting and fishing, the Indians raised hogs, corn, pumpkins, sugar cane, and other crops. In the winter and early spring, groups of Seminoles brought alligator hides, plumes, and pelts to trading posts at Fort Myers, Everglades City, Chokoloskee, Fort Lauderdale, Miami, and Bill Brown's store. Brown's store was for a time located at the site of present-day Immokalee and later at Boat Landing, thirty miles to the southeast in the Big Cypress Swamp. The Seminoles largely avoided any other contact with whites, seeking to maintain their traditional lives on land that no one else wanted. Religious groups and the U.S. Office of Indian Affairs made sporadic attempts to Christianize the Indians and persuade them to settle on permanent homesteads, but they had no success.⁸⁸⁴

When the Florida East Coast Railroad reached Miami in 1896 and the state's drainage work got going early in the twentieth century, the Seminoles found it harder to keep to their traditional ways. Federal laws limited the plume trade, and drainage lowered water levels, making it much harder to navigate by canoe and greatly reducing game populations. The Indians also faced more competition for game from white hunters. The federal government began to purchase or set aside acreage for reservations, including the Dania (now Hollywood) Reservation in Broward County and the nucleus of the Big Cypress Reservation in Hendry County. For the most part, the Seminoles declined to move to the reservation land. In 1917, the Florida legislature established a Seminole reservation on 99,200 acres in Monroe County, running from Lostmans River to Shark River (figure 4-1). The act provided that the land was "for the perpetual use and benefit of the Indians," and the state intended eventually to turn this reservation over to the federal government to administer. Seminoles used the Monroe County reservation for hunting and fishing, but it contained little high ground suitable for crops or permanent

⁸⁸³ Until the 1950s, all Florida Indians generally were referred to as Seminoles. As described later in the chapter, the Miccosukee Tribe of Indians of Florida in 1962 obtained recognition as a separate tribe.

⁸⁸⁴ James W. Covington, "Federal and State Relations with the Florida Seminoles, 1975-1901," *Tequesta* 32 (1977):17-27. In 1947, the Office of Indian Affairs was renamed the Bureau of Indian Affairs.

residences. Already by the 1910s, some Seminoles had been hired by tourist attractions in Miami, being paid to set up camps where visitors could observe them and buy their craft items. With the completion of the Tamiami Trail in 1928, a number of Seminole families moved their camps from the Big Cypress Swamp to the trail, where they could make a living from the tourist trade. The Indians charged an admission fee for entry into their villages along the trail; sold dolls, baskets, and patchwork clothing; and entertained visitors with alligator wrestling. Some males also served as guides for hunters.⁸⁸⁵

The Impact of the Proposed Park on Indians

When the Everglades National Park Association began lobbying for a national park in the Everglades in the late 1920s, it was immediately apparent that a park would have a major impact on the Seminoles. The park's proposed boundary included the state reservation in Monroe County and the sites of a number of Indian camps on both sides of the Tamiami Trail (figure 19–1, a Seminole camp on the Tamiami Trail, 1927). The acreage within the proposed park had been prime hunting ground for the Seminoles for more than a hundred years, and hunting was not considered an appropriate use in national parks. Early on, the NPS, the Office of Indian Affairs, and state officials decided that the Monroe County reservation could be replaced by a comparable tract of state land in Broward and Palm Beach Counties. This replacement tract was similar to the Monroe acreage, flooded much of the year and mostly unsuitable for agriculture. There is no evidence that the Indians were consulted on this swap of reservation land.⁸⁸⁶



Figure 19–1, a Seminole camp on the Tamiami Trail, 1927

⁸⁸⁵ Executive Order 1379, “Seminole Reserves, Florida,” June 28, 1911; James W. Covington, “Florida Seminoles: 1900–1920,” *Florida Historical Quarterly* 53, no. 2 (1974): 181–97; Laws of Florida—1917, Chapter 7310 (No. 52); James W. Covington, “Trail Indians of Florida,” *Florida Historical Quarterly* 58, no. 1 (1979): 37–40.

⁸⁸⁶ Dir. Cammerer to Elbert E. Burlew, Mar. 13, 1934, NARA II, RG 79, NPS CCF, box 903.

Ernest Coe and other Florida park proponents thought that the park would greatly benefit the Indians. Coe believed that game animals, protected from hunting inside the park, would rapidly expand in numbers and then spill over into the adjacent, newly established reservation. Coe confidently predicted that this offered the Seminoles “a constant future supply of game.” In addition, he believed the park would provide many opportunities for Indians to work as canoe guides and to sell their craft items. Coe wrote “what could be more tempting . . . than a trip . . . through one of these jungle waterways sitting in the bow of a dugout canoe guided by a Seminole, who fits so perfectly into the picture?” Coe was no doubt sincere in his desire to help the Seminole, although his language suggests he saw them more as romantic landscape features than anything else. He also had a knack for seizing upon any possible argument that might promote the park’s prospects. Interior officials picked up these same themes. In a radio address, Assistant Secretary Oscar L. Chapman was at pains to “assure all friends of the Seminoles that this tribe will not suffer through the establishment of the Everglades National Park. Rather, it will be a boon to these Indians.”⁸⁸⁷

Some prominent Floridians and federal legislators were less confident that the interests of the Seminoles would be protected. Minnie Moore-Wilson, long a champion of the Seminoles and author of an early book on them, said: “Do insist that no plans for a national park be considered that do not recognize the rights of the Seminole Indian to abide within the ancient strongholds of his race.” In the debate on the Everglades park bill, Congressman René DeRouen (D-Louisiana) stated “by passing this bill we are giving them [the Seminole Indians] a home, and [putting them] in a position to live there, where they should live.” As enacted, the 1934 authorizing legislature protected “the existing rights” of the Seminoles as long as they did not conflict with the park’s purpose.⁸⁸⁸ Following the park’s establishment, the meaning of these existing rights was open to considerable debate within the NPS.

Ascertaining what Florida Indians thought about the prospect of a national park in the Everglades in the 1930s is very difficult. Few Seminoles were fluent in English, and all statements attributed to them are filtered through whites’ notions of what Indians could be expected to say and ought to sound like. Deaconess Harriet Bedell ministered to the Indians for thirty years and may have understood their position as well as any outsider. In 1936, she wrote Ernest Coe:

⁸⁸⁷ Ernest F. Coe to Henry R. Cloud, Field Representative, Office of Indian Affairs, Dec. 8, 1931, NARA II, RG 79, NPS CCF, box 234; Excerpt from radio address, Apr. 1, 1934, Gov. Sholtz papers, box 40. Coe’s game argument had already proven false in the 1930s; prey animals sense where they are protected and tend not to wander beyond the sanctuary boundaries.

⁸⁸⁸ “Recognize Rights of Seminole in Creation of National Park, Urge of Indians’ Benefactor,” *Florida Times-Union*, June 2, 1929; Cong. Rec. H9494 (1934).

Neither I nor the Indians are against it [the park]. As I told you, I am not telling the Indians what to do. I cannot do this but in talking with them they tell me they will be glad to help in any way but are not willing to move from their present villages and they will fight against going on a reservation. They are opposed to the park crossing the Tamiami Trail. They think it should end at Pinecrest, south of the Trail.⁸⁸⁹

When the Florida cabinet in 1937 was preparing to formally abrogate the Monroe County reservation and replace it with one in Broward County, a council of elders from the Big Cypress and Tamiami Trail camps protested against any idea of moving them to the new reservation. They seemed less concerned about losing the Monroe County reservation, which they mainly used to hunt and fish, than being able to stay in their existing camps farther north in the Big Cypress and along the Tamiami Trail. Because enforcement of game laws in Monroe County was virtually nonexistent in the 1930s, the formal elimination of the reservation there likely did not interfere with hunting by Indians (or whites).⁸⁹⁰

At the time that Everglades National Park was authorized, federal Indian policy was undergoing major changes. President Roosevelt's reform-minded commissioner of Indian Affairs, John C. Collier, took advantage of the New Deal relief agencies, such as the WPA and the CCC, to give Indians work. In 1934, he helped pass the Indian Reorganization Act.⁸⁹¹ The act's thrust was to give tribes more control over their land and business activities and end the previous government policy of converting communal tribal land to individual ownership. Collier and his boss, Secretary of the Interior Harold Ickes, took a particular interest in the Indians of Florida. Under Collier, the existing Big Cypress Reservation was expanded and a new reservation, the Brighton Reservation, was established in Glades County, northwest of Lake Okeechobee. Ickes and Collier met with a group of about 160 Seminoles in West Palm Beach in March 1935. The West Palm Beach Chamber of Commerce organized this event, which was described in the press as a "pow-wow" and featured a "Seminole sun dance." The Indians offered terms of a proposed peace treaty with the federal government. After this meeting, Ickes told a radio audience "Everglades National Park would contribute also to the economic and social rehabilitation of the Seminole Indians, for whose welfare I have a great concern."⁸⁹²

⁸⁸⁹ Harriet M. Bedell to Ernest F. Coe, Apr. 21, 1936, CP, EVER 13803.

⁸⁹⁰ "War Talk Sweeps Glades as Indians Protest Removal," *Miami Tribune*, Apr. 11, 1937.

⁸⁹¹ This is also known as the Wheeler-Howard Act.

⁸⁹² Harry A. Kersey Jr., *The Florida Seminoles and the New Deal* (Boca Raton: Florida Atlantic University Press, 1989), xi–xii, 75–78; "Secretary Ickes Reveals Program to Aid Seminoles," *Palm Beach Post*, Mar. 19, 1935; "Seminoles Present Peace Pact Details," *Miami Herald*, Apr. 4, 1935; DOI press release, Mar. 31, 1935, CP, EVER 22302.

The reaction of Seminoles from the Big Cypress country to the visit of Ickes and Collier underscored how little Washington officials understood the linguistic, geographic, and cultural complexities among Florida Indians. The great majority of the Indians who met with the secretary were from the area around Lake Okeechobee. Big Cypress/Everglades area Indians, who were not invited to West Palm Beach, branded the event a “fake” and a “burlesque.” With the assistance of W. Stanley Hanson, a Mikasuki-speaking white employee of the Office of Indian Affairs, they drafted a petition to Congress, the Secretary of the Interior, and state officials. Signed by Cory Osceola, William McKinley Osceola, Richard Osceola, Charlie Billie, Josie Billie, and Chestnut Billie, the petition declared that the Big Cypress Indians had no interest in a treaty with, or aid from, the national government. They wished to live “as our fathers lived . . . free from the ever-changing and hindering policies of the white man.” Although lumped together as Seminoles by whites, the Lake Okeechobee area Indians and Big Cypress Indians lived differently and in many cases spoke mutually unintelligible languages (figure 19–2, a Miccosukee in a cypress canoe). The Big Cypress Indians predominantly spoke Mikasuki, a Hitchiti dialect. Some of the Indians living around the lake spoke Mikasuki; others spoke Muskogee. During the New Deal, the Office of Indian Affairs promoted large cattle raising operations on the Brighton and Big Cypress Reservations. The nonreservation Big Cypress Indians stuck to their traditional lifeways and had no interest in large-scale, market-oriented enterprises, such as stock raising. This divergence in economic activity served to accentuate the cultural differences between the two groups.⁸⁹³



Figure 19–2, a Miccosukee in a cypress canoe

⁸⁹³ “Seminoles May Get New Lands in Everglades,” *Florida Times-Union*, Mar. 24, 1935; “Seminole Pact at Palm Beach Called a ‘Fake,’” *Miami Daily News*, Mar. 23, 1935.

NPS-Indian Relations Following Establishment

The park's establishment in 1947 forced the NPS to give more thought to the future of the Indians living in and near it. At the time, Indians appear to have maintained few camps deep inside the park. Dan Beard reported that Jimmie Tommy had a camp about five miles south of the end of the Humble Oil Road (present-day Shark Valley Road), John Jumper a "temporary" camp near the headwaters of Shark River, and Jim Tiger and William McKinley Osceola had camps on the south side of Tamiami Trail. In later decades, members of the Miccosukee Tribe stated that they had more than the two camps within the "central areas" of the park mentioned by Beard and that the NPS pressured them to abandon them. This claim is hard to evaluate because the only contemporary documentation is from the NPS.⁸⁹⁴

First as manager of the wildlife refuge and then park superintendent, Beard worked with Kenneth Marmon, superintendent of the Seminole Agency in Florida, to contact Indians in the area. In May 1947, Beard met with John Jumper, Jim Tiger, and William McKinley Osceola. Then and later, he told Tiger and Osceola they could remain in their camps along the trail, and Jumper agreed to relocate to a new camp along the trail, completing the move by October 1947. Although the NPS announced no policy on the matter, it allowed the Indian camps within the park along the south side of the Tamiami Trail to remain. In the park's early years, the NPS moved cautiously, aware that Congress had protected the existing rights of the Seminoles when the park was created, but unsure of just what that entailed. Additionally, it was clear that the Indians living along the Tamiami Trail would vigorously resist any attempt to move them. In 1949, Beard believed there might be one or two "overnight" camps still being maintained deeper within the park. The NPS did insist that hunting and frogging in the park by Seminoles (and all others) cease. Available records indicate that illegal hunting by whites was a far greater problem in the early years than hunting by Indians.⁸⁹⁵

Beard and his successor Warren Hamilton reported having mostly good relations with neighboring Indians through the 1950s. Beard described his May 1947 meeting as "entirely cordial." In March 1957, Beard and three other park staff were invited to meet in a chickee with more than a dozen Indians at a "hidden" village. They spent an afternoon exchanging views on NPS philosophies and Indian philosophies. Bill Doctor, who acted as translator, reported that the Indians liked what they heard. Oral tradition among the Miccosukees paints a different picture of the relationship. That tradition

⁸⁹⁴ Daniel B. Beard to James Silver, FWS, May 30, 1947, NARA II, RG 79, NPS CCF, box 901; Statements of Tribal Chairman Billy Cypress and Tribal General Counsel Dexter Lehtinen, *Hearing Before the Committee on National Parks and Public Lands of the Committee on Resources, House of Representatives*, Sept. 25, 1997, No. 105-65, 29-32.

⁸⁹⁵ Kenneth A. Marmon, Supt., Seminole Agency, to Daniel B. Beard, Apr. 24, 1947, Daniel B. Beard to James Silver, RD, FWS, May 30, 1947, NARA II, RG 79, NPS CCF, box 901; Daniel Beard to RDR1, Oct. 8, 1947. NARA Ph, RG 79, 79-58A-360, box 7.

describes Beard telling the Indians at an early meeting that he was going to “drive you pickaninnies” out of the park.⁸⁹⁶ It is impossible at this remove to know just what Beard told the Seminoles. It is significant that some 60 years later, however, it is this threat and language that the Indians remember.

Interpreting the Native American Presence

As the NPS began planning an interpretive program for the park, Superintendent Beard considered including some “Seminole culture exhibits.” From the beginning, the service focused its interpretive program on the natural environment. The service seems never to have given serious consideration to Ernest Coe’s idea of employing colorful Indian guides, although some Miccosukees expressed an interest. Superintendent Beard thought it would remain a minor emphasis, but he believed that “complete avoidance of the Seminole in the [interpretive] program . . . seems unwise to me.” He briefly floated the idea of retaining the camps of John Jumper or Jimmie Tommie as historical exhibits, with dugout canoes, pumpkin gardens, and even “clothes hung up to dry.” This idea was soon dropped, probably because of the difficulty and potential resource damage involved in bringing visitors to the camps. Throughout his superintendency, Beard remained interested in the idea of a Seminole museum or Seminole camp exhibit, preferably along the Tamiami Trail. Park managers understood that “quite a number of the hammocks in the Tamiami area” contained evidence of past Seminole occupancy, and thus Shark Valley emerged as a logical spot for interpreting Seminole history and culture. The park’s 1979 Master Plan restated the goal of using a visitor center at Shark Valley to “introduce visitors to Indian culture.” NPS management moved away from the idea of a Seminole camp as an exhibit out of distaste for the idea of displaying living Indians to visitors. Congress never funded a major visitor center at Shark Valley, and the park therefore did not mount a permanent exhibit on Seminole culture. The Seminole presence was briefly mentioned in the exhibits at Flamingo. Overall, it seems that the Indians were not very comfortable with the idea of the NPS interpreting their culture. In 1983, the Miccosukee Tribe opened its own Miccosukee Museum of Natural and Tribal History on the Tamiami Trail. The park also included a text panel on Miccosukee life in the Ernest Coe Visitor Center, which opened in late 1996 (see Chapter 20).⁸⁹⁷

⁸⁹⁶ Daniel B. Beard to James Silver, RD, FWS, May 30, 1947, NARA II, RG 79, NPS CCF, box 901; Daniel Beard to RDR1, Oct. 8, 1947, NARA Ph, RG 79, 79-58A-360, box 7; SMR, Mar. 1957; Supt. Kimball, personal communication, Oct. 30, 2013. Present at the 1957 meeting were Beard, the asst. supt., the asst. park naturalist, the Tamiami District ranger, medicine men Ingraham Billy, Frank Charlie, Jimmy Billy, and council members Willy Jim, John Fu, Henry Billy, Wilson Doctor, Jack Cloy, Tom Buster, Frank Jimmy, Jimmy Doctor, Albert Osceola, Concho Billy, and Billy Doctor.

⁸⁹⁷ Kenneth Marmon, Supt, Seminole Agency, to Daniel Beard, Apr. 24, 1947, NARA II, RG 79, NPS CCF, box 901; Supt. Beard to Dir., May 11, 1948, NARA Ph, RG 79, 79-58-360, box 7; Refuge Mgr. Beard to RDR1, May 8, 1947, Supt. Hamilton to RDR1, Dec. 23, 1958, NARA Ph, RG 79, 79-67-A-1022; Acting Supt., ENP, to RDR1, May 27, 1958, NARA Ph, RG 79, 79-66-A-661, box 7; NPS, *Everglades National Park Master Plan*, 1979; “Indian Life at One with Nature in the Everglades,” *Atlanta Journal-Constitution*, Jan. 9, 2005; Sandy Dayhoff, personal communication, Nov. 8, 2013.

U.S. Indian Policy in the 1950s

U.S. policy toward Native Americans changed again after World War II. In 1947, the Office of Indian Affairs within the DOI became the Bureau of Indian Affairs (BIA), and Congress set up the Indian Claims Commission, allowing tribes to seek compensation for past wrongs. In 1950, twelve reservation Seminoles hired attorneys to file a \$50,000,000 claim against the federal government. Additionally, in the 1950s, under President Eisenhower and a conservative Congress, the BIA moved to limit or end its responsibilities to many tribes, including Florida Seminoles. The mostly Mikasuki-speaking Indians living along the Tamiami Trail and in camps in the Big Cypress were disturbed by these developments. These individuals were more interested in gaining land than monetary damages. In addition, they believed that the reservation Indians, with their horse and cattle operations and closer contact with whites, did not understand them and could not adequately represent them. As the interests of the reservation Indians and Big Cypress/Everglades Indians diverged in the 1950s, both groups moved to achieve official federal government recognition. By 1954, many of the nonreservation Big Cypress Indians had set up their own council, the “General Council of the Mikasuki Tribe of Seminole Indians.” Leaders in this effort were Ingraham Billie, Buffalo Tiger, George Osceola, and Jimmie Billie. As described below, this ultimately resulted in the 1962 federal recognition of the Miccosukee Tribe of Indians of Florida. The tribe adopted the Miccosukee spelling to avoid confusion with the language that they spoke, generally spelled Mikasuki.⁸⁹⁸

Federal and state officials were slow to grasp that the Miccosukee contingent represented a sizable minority of Florida Indians. The Indian Claims Commission continued to insist that the reservation Indians who filed the 1950 monetary claim represented all Florida Indians. In March 1954, two groups of reservation Indians and a group representing Miccosukee interests went to Washington to protest against the proposed end of federal aid. The Miccosukee leaders George Osceola, Jimmy Billie, and Buffalo Tiger presented a “Buckskin Declaration” to a representative of President Eisenhower, asking that a federal representative come to Florida and that their separate status be recognized. With help from the Florida congressional delegation, the Florida Indians managed to hold on to their three federally administered reservations and their federal aid. In August 1957, the federal government recognized the Seminole Tribe of Florida, consisting of Indians from the three federal reservations and a few others. The government and Seminole tribal leaders invited the Indians who self-identified as Miccosukee to become members, but they declined. This left almost all the Miccosukee living in homes on land that they did not own.⁸⁹⁹

⁸⁹⁸ Covington, “Trail Indians,” 41–45.

⁸⁹⁹ Covington, “Trail Indians,” 43–48; Harry Kersey, *An Assumption of Sovereignty: Social and Political Transformations Among the Florida Seminole, 1953–1979* (Lincoln: University of Nebraska Press, 1996), 195–96.

In September 1958, Miccosukee leaders made a “final offer” to settle their claims with the state and national governments. Most of their requests were directed at the state, but they also wanted the right to frog commercially in Everglades National Park, and fish, camp, and cut timber for their own noncommercial use. Park Superintendent Warren Hamilton expressed surprise at these requests, observing that only one Miccosukee, Jimmy Tiger, had ever asked to frog or farm in the interior of the park. NPS Director Conrad Wirth saw these as requests for “special privileges” and declined to grant them, stating that NPS policy would be applied equally to all. To bolster their case for federal recognition, the Miccosukee mounted a sophisticated public relations campaign. In 1959, the tribe invited thirty-six leaders representing 100,000 American Indians to a conference at a camp on the Tamiami Trail. The assembled leaders talked about seeking recognition from the United Nations if the U.S. government was unresponsive. The same year, a Miccosukee delegation met with Fidel Castro in Havana. Buffalo Tiger later commented that only after the media coverage of these events were his phone calls to state and federal officials returned.⁹⁰⁰

The Miccosukee Become a Federally Recognized Tribe

In late 1961, a group of Miccosukee leaders met at Jimmie Tiger’s camp to draw up a tribal constitution. On January 11, 1962, the Secretary of the Interior formally recognized the Miccosukee Tribe of Indians of Florida, separate and distinct from the Seminole Tribe. A few dozen Florida Indians, most living near Naples, declined to join either tribe and are sometimes known as traditional Seminoles or independent Seminoles. A key player in the campaign to achieve federal recognition was Buffalo Tiger, who served as tribal chairman from 1961 to 1985. With the Miccosukees having achieved federal recognition and the water control structures of the Central and Southern Florida Project nearing completion, the state and federal governments acted to regularize relations with the tribe and provide them with facilities. The state divided the reservation created in 1937 in Broward and Palm Beach Counties, assigning the northern 28,000 acres to the Seminoles and the southern 76,000 acres to the Miccosukees. Most of the acreage given to the Miccosukee lay within WCA 3. Florida also ultimately granted the Miccosukee a perpetual lease on an additional 189,000 acres in WCA 3. In 1962, the state ceded three small parcels on the north side of the Tamiami Trail to the tribe. The tribe constructed a restaurant and a gas station/convenience store on these tracts. Also in 1962, the Department of the Interior for the first time officially recognized the Miccosukee settlements on park land. The director of the NPS and the commissioner of Indian affairs signed a special use permit (SUP) covering a five-and-

⁹⁰⁰ Commissioner, BIA, to Dir., NPS, Oct. 6, 1958, Supt. to RDR1, Nov. 3, 1958, Dir., NPS, to Commissioner, BIA, Nov. 14, 1958, NARA Ph, RG 79, 79-067-1-1022, box 83; Covington, “Trail Indians,” 51-52; Buffalo Tiger and Harry A. Kersey Jr., *Buffalo Tiger: A Life in the Everglades* (Lincoln: University of Nebraska Press, 2002), 88-90.

one-half-mile-long strip on the south side of the Tamiami Trail, where Miccosukee families had been living since the late 1920s.⁹⁰¹

This Miccosukee Reserved Area consisted of a tract some 500 feet wide running from just west of the park's Shark Valley developed area to the point where the park boundary turned south from the Loop Road (figure 19-3, Miccosukee Reserved Area). The initial SUP was only a page and one-half and not very detailed. It specified that:

The lands will be for the use of the Bureau of Indian Affairs to provide places for the Seminole [*sic*—this was corrected to Miccosukee in later versions] Indians to live, make and sell handicrafts, and for such administrative and educational facilities as the Bureau of Indian Affairs may require.

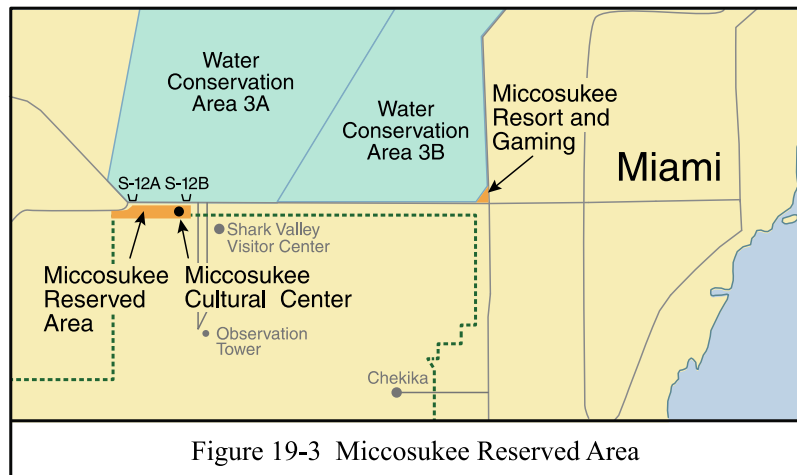


Figure 19-3 Miccosukee Reserved Area

The entire Miccosukee SUP area was wetland, so constructing any structure required first filling some part of the wet prairie to create a pad as a foundation. The SUP contained two loosely worded provisions meant to regulate building: “[A]ll improvements will be so designed as to be in harmony with the scenic values of the Park” and “No construction activity, dredging or filling will be carried on which will interfere with the free flow of water from the north through or over Park lands.” The SUP, however, did not require advance approval by the NPS of construction activity.⁹⁰²

⁹⁰¹ Covington, “Trail Indians,” 54; Kersey, *An Assumption*, 195–97; Dir. Wirth to SOI, Aug. 21, 1962, NARA II, RG 48, Office of the SOI, CCF, box 327; Buffalo Tiger and Kersey, 90–95.

⁹⁰² Use Permit, Aug. 29, 1962, NARA II, RG 48, Office of the SOI, CCF, box 327. Two years later, the park reluctantly agreed to grant a second special use permit to the Miccosukee to bury tribal members on a hammock within the park. RDSE to Supt., July 9, 1964, NARA Ph, RG 79, 79–69–5662, box 11.

The tribe developed an administrative center at the eastern end of the reserved area, with housing activity mostly farther west. Before 1962, most Miccosukee children did not attend school. The BIA put up a temporary school building in December 1962, with an initial enrollment of nineteen children. A permanent two-room school with a cafeteria opened in September 1965. Later additions to the administrative area included a tribal headquarters and a community building with a gymnasium. In 1971, the Miccosukee became one of the first recognized tribes to establish a tribal corporation and assume control of all the programs and services previously provided by the BIA. From this point, a federal agent was no longer assigned to the tribe. The Florida Indian Claims Settlement Act of 1982 (P.L. 97–399) ratified the agreement between the tribe and the state of Florida on land claims. It also provided for the Broward reservation and the restaurant and gas station parcels to become federal reservation land, held in trust by the secretary of the interior for the Miccosukee.⁹⁰³

Shortly after the tribe took responsibility for its own operations, the NPS moved to establish a new SUP for the reserved area, with the tribe rather than the BIA as the other signatory. The new permit covered the period from January 1973 to January 2014. Park managers now better understood the implications of having the reserved area between the flow-way structures of WCA 3 and the northwest Shark Slough; they sought to ensure that development in the area not adversely affect water deliveries needed by the park. The new SUP therefore required prior approval from the NPS for any “construction, dredging or filling . . . that will affect the water quality or interfere with the free flow of water from the North through or over the park lands.” Further, the tribe agreed to provide the park superintendent with “all plans and specifications” for any construction that it planned and to give the NPS “a detailed description” of a project’s impacts on “air and water quality, scenic and aesthetic features, historical and archeological features, and wildlife.” The intent of the new SUP was to give the NPS more input into decisions on development in the reserved area that potentially affected park resources. Although more comprehensive, the permit lacked specificity on what form tribal submittals to the park should take, the time period for park consideration of submittals, and the consequences of failure by either side to abide by the permit’s terms.⁹⁰⁴

⁹⁰³ Miccosukee Tribe of Indians of Florida, “The Miccosukee Tribe of Indians of Florida,” n.d. [1976?], EVER 56572, ser. II; Covington, “Trail Indians”; *Miccosukee Tribe of Indians of Florida v. State of Florida and Florida Department of Transportation*, et al., Docket No. 6285–Civ–Paine.

⁹⁰⁴ Special Use Permit, Everglades National Park and Miccosukee Tribe of Indians of Florida, Jan. 1973, EVER 56572, ser. II.

Evolution of the Park's Relationship with the Tribe

Up to the 1980s, park management's relationships with the tribe appear to have been largely amicable, at least on the surface. The tribe has had its own police force since the mid-1970s, and park rangers and Miccosukee police routinely cooperate, under the terms of a memorandum of understanding. Park and tribal fire management teams also work together. The park included the tribal school in its environmental education program, and park staff assisted with crowd control and other needs for special tribal events. Assessing the relationship in 1978, Superintendent John Good believed that "the general atmosphere has been respectful and mutually considerate." Most tribal members had low incomes and lived in modest chickees or manufactured houses, which had limited impact on the environment. In the 1970s, it was estimated that Florida Indians on average earned one-half what whites did. In the main, park operations and Miccosukee life went on in two separate, adjacent spheres.⁹⁰⁵

Increased revenues from the tribe's Tamiami Trail restaurant and service station and more importantly from gaming operations brought a number of changes. The tribe opened a bingo parlor seating 2,000 at the corner of the Tamiami Trail and Krome Avenue (known as "Dade Corners") in September 1990. The tribe has steadily expanded that operation, adding gaming machines and poker tables (figure 19-4, Miccosukee resort at Dade Corners). In June 1999, it opened an elaborate resort complex at the site, featuring 300 hotel rooms, an indoor pool, high-quality dining, a spa, and an 1,800-seat arena for live and pay-per-view events. The Miccosukee also operate a profitable service station/rest stop on I-75, which it runs through their Broward County reservation. This economic activity substantially increased the income of tribal members. The data are confidential, but estimates of yearly payments to members have run as high as \$61,000. As the tribe's wealth grew, members looked to build larger, modern homes in the reserved area.⁹⁰⁶

⁹⁰⁵ Supt. Good to RDSE, Mar. 29, 1978, Supt. Ring to Judith L. McCluney, Jan. 31, 1997, EVER 56572, ser. II; "Crisis in Red and White," *Miami Herald*, Dec. 31, 1972; Memorandum of Understanding between NPS and Miccosukee Tribe of Indians of Florida, Mar. 16, 1990, EVER 22965. A hint of underlying tensions in the relationship can be found in a 1966 incident. The SMR for Dec. 1966 notes that children of NPS staff at the Tamiami Ranger Station had developed hookworm, attributed to Miccosukee dogs that roamed freely in the area. The report noted "the Miccosukee health problems are now the Park Service health problems."

⁹⁰⁶ "Miccosukee Tribe Banking on Bingo," *Miami Herald*, Sept. 27, 1990; "From Everglades Defender to Developer, Tribe is Stepping Out," *Los Angeles Times*, June 3, 1999; "Glittering Resort Shows Miccosukee Transformation," *Atlanta Journal-Constitution*, June 13, 1999; "IRS Investigates Tribe over Gambling Profits," *South Florida Sun-Sentinel*, June 29, 2010.



Figure 19-4, Miccosukee resort at Dade Corners

The Housing Issue

In 1990, the tribe moved forward with plans to build forty-five additional houses in the reserved area, affecting a little more than thirteen acres. The location of the reserved area just south of flood control structures 12-A and 12-B made this proposed development of great concern to the park. Water released from WCA 3A via these floodways passes across the Miccosukee lands before entering northwestern Shark Slough. Building forty-five houses and their associated septic fields had the potential to affect the flow of surface water reaching the park and its quality. The tribe began building foundation pads for the new houses without notifying the park of its intentions, as required by the SUP, and without obtaining a permit from the U.S. Army Corps of Engineers, required under section 404 of the Clean Water Act. The NPS, the Corps, and state agencies worked with the tribe to obtain the necessary permit, and construction proceeded. As part of the mitigation for filling in wetlands for housing, the tribe agreed to prepare a comprehensive land use plan

for the reserved area. In the wake of this incident, NPS managers grew increasingly concerned that the tribe was treating the reserved area as sovereign tribal land and ignoring its obligations under the SUP. Rather than deal with piecemeal construction activity, the service wanted to see a professionally prepared comprehensive land use plan that would give it a better idea of the cumulative impacts of construction activity.⁹⁰⁷

By 1993, the tribe was ready to construct more houses. It submitted a conceptual use plan to NPS that contained schematic drawings for forty-nine new houses. Park managers judged the plan inadequate but were slow to communicate their concerns to tribal officials. In part, this was because they were preoccupied with recovery efforts following Hurricane Andrew. A number of key park personnel who had worked closely with the tribe left after Andrew, and the loss of these established relationships was felt. Eager to build better houses, the tribe in March 1994 informed the NPS of its intention to seek a section 404 permit for new housing. In late April, it applied to the Corps for a permit for sixty-five houses strung out along the Loop Road west of existing residential development. The NPS informed the Corps that it had not approved any additional housing in the reserved area and asked that the permit be denied. Still looking to get an acceptable comprehensive land use plan, the park in October 1994 sent the tribe information on preparing such a plan.⁹⁰⁸

Convinced that the park was unnecessarily delaying its housing plans, the tribe in 1994 filed suit in federal court asking that the Everglades superintendent be ordered to approve the tribe's construction plans. Former U.S. attorney Dexter Lehtinen had become the tribe's counsel in 1992 and would remain in that role until May 2010. Lehtinen and Billy Cypress, who was tribal chairman from 1987 to 2009, increasingly used lawsuits to further the tribe's interests. For its part, the park continued to press the tribe for a comprehensive land use plan. The judge overseeing the housing lawsuit directed the NPS to speed up its review process, and the park in June 1996 produced an environmental assessment with its preferred layout for ninety-five new residences. To reduce the impact on water flow, the park's plan called for thirty houses along the Loop Road, with the remainder scattered in already-developed areas. The tribe found this configuration unacceptable. In October 1996, Secretary of the Interior Babbitt intervened, resulting in an agreement that allowed for the construction of the thirty houses along the Loop Road. The suit over the remaining houses continued.⁹⁰⁹

⁹⁰⁷ SAR, 1990; Deputy Assoc. Solicitor David Watts to Deputy Solicitor, DOI, June 20, 1996, Supt. Ring to Judith L. McCluney, Jan. 31, 1997, EVER 56572, ser. II.

⁹⁰⁸ Elaine Hall, interview by author, June 28, 2012.

⁹⁰⁹ *Miccosukee Tribe of Indians v. the United States*, No. 94-CIV; Miccosukee Tribal Suits and Actions to Delay the Restoration, n.d. [late 1999], EVER 56572, ser. II; "U.S. Approves Tribal Housing in Everglades; Disagreement Remains on More Construction," *Washington Post*, Oct. 27, 1996.

Housing was not the only issue that strained relations between the tribe and the park staff in this period. The Miccosukee had long been unhappy about the maintenance of high water levels in WCA 3, much of which was their reservation land or leased to them by the state. The high water limited the tribe's use of the land, degraded tree islands and other natural features, and killed many deer. Heavy rains hit South Florida in fall 1994, including those associated with Tropical Storm Gordon. To alleviate flooding in the WCA and the reserved area, the tribe requested that the S-12 and S-333 water control structures along the southern boundary of WCA 3 be opened and vegetation behind the structures be cut. The Corps, the SFWMD, and the park agreed to some limited flood-reduction measures, but the park opposed the major steps requested by the tribe. The NPS believed opening the S-12s would unnaturally raise water levels in the western Shark Slough, threatening the habitat of the Cape Sable seaside sparrow and that vegetation cutting would speed the flow of unwanted nutrients into the park. On March 16, 1995, the tribe brought suit in federal court against the Department of Interior, the Corps, and the SFWMD alleging that agency actions constituted a breach of trust and violated the tribe's constitutional rights. In addition to the agencies, NPS superintendent Richard Ring was sued in his individual capacity in what is known as a Bivens action. Because of his determined efforts to protect the park's values and hold the tribe to the terms of the SUP, Ring became a particular target for the Miccosukees' accumulated grievances. After extensive discovery proceedings and hearings, the court eventually ruled in favor of the defendants.⁹¹⁰

The Miccosukee Reserved Area Act of 1998

The dispute over housing played out alongside the controversy over the flooding of tribal lands. Believing that the NPS was determined to keep the tribe from exercising full sovereignty over its ancestral lands, the Miccosukee sought federal legislation to conclusively establish their rights in the reserved area. Tribal counsel Dexter Lehtinen was married to Florida Congresswoman Ileana Ros-Lehtinen, and ultimately this connection helped to achieve legislation favorable to the tribe. In September 1996, Florida Representatives Alcee Hastings, Carrie Meek, Lincoln Diaz-Balart, and Dan Miller introduced a bill amending the 1934 act establishing the park. Offered near the end of the second session of the 104th Congress, this bill largely represented a statement of intent and had little chance of passage. The bill would have given full reservation status to the SUP area and eliminated the need for NPS approval of

⁹¹⁰ *Miccosukee Tribe of Indians of Florida v. United States*, No. 95-0532-CIV-Davis, 980 F. Supp. 448 (1997), http://www.leagle.com/xmlResult.aspx?page=4&xmlDoc=19971428980FSupp448_11360.xml&docbase=CSLWAR2-1986-2006&SizeDisp=7. In 1971, the U.S. Supreme Court in *Bivens v. Six Unknown Named Federal Agents* (403 U.S. 388) recognized a cause of action against federal officials as individuals for violations of constitutional rights.

construction activity. In September 1997, the House Subcommittee on National Parks and Public Lands convened a hearing on the SUP area, which ultimately resulted in the passage of the 1998 Miccosukee Reserved Area Act. In opening the hearing, Subcommittee Chair James V. Hansen (R-Utah) expressed his hope that a frank discussion would lead to a solution reconciling the tribe's development needs with the park's mission of protecting natural resources.⁹¹¹

At the hearing, the tribe and the NPS presented their positions. Reflecting many decades of frustration, Chairman Cypress flatly stated that "the NPS works as an agent of our destruction." He accused high Interior officials of threatening to evict the Miccosukee when the permit expired in 2014. Cypress asked that the tribe be "guaranteed rights of self-government [in the reserved area] . . . without paternalistic and misguided Park Service employees telling them what's good for them." Deputy Interior Solicitor Edward Cohen told the subcommittee that the reserved area "is located immediately downstream of structures that deliver the Park's water from the north" and reminded members that the NPS needed "to balance development in the . . . permit area with the protection and perpetuation of Park resources." He noted that discussions with the tribe leading to a legislated solution were under way and believed an acceptable solution was within reach.⁹¹²

In November 1997, Congressman Hastings introduced a bill converting the special use area into the "Tamiami Indian Reservation." Senator Connie Mack introduced an identical resolution in the Senate. This bill voided the special use permit and granted the Miccosukee tribe full sovereignty over the strip along the Tamiami Trail, enlarging it to 666 acres. The bill acknowledged that the tribe would need to obtain section 404 permits for construction activity from the Corps of Engineers, but it contained no other language that safeguarded water flows and water quality. The NPS and a number of environmental groups opposed this bill, believing it left far too many issues unresolved. Of particular concern to the NPS was a reverter clause contained in the state's original conveyance of the land embracing the Miccosukee strip to the federal government. The clause provided that the land would revert to the state if it ever ceased to be used as a national park. In its initial form, the bill declared the Tamiami Trail Reservation to be compatible with Everglades National Park, but it did not specify that the reservation remained part of the park. Other areas of concern were the visual effect of development on the visitor experience at Shark Valley and the precedent that the act would establish. Of paramount importance to the NPS was

⁹¹¹ H.R. 4199, "A Bill to Amend the Act Entitled An Act to Provide for the Establishment of the Everglades National Park," 104th cong., 2nd sess., Sept. 26, 1996; *Hearing before the Subcommittee on National Parks and Public Lands of the Committee on Resources, House of Representatives Concerning the Miccosukee Tribe's Ongoing Negotiations with the National Park Service Regarding the Special Use Permit Area*, No. 105-65 (1997), 1.

⁹¹² *Hearing*, No. 105-65, 29, 31.

getting language into the act that would allow it to prevent development in the reserved area that would impede surface water flow. Negotiations between the DOI and tribal representatives continued into 1998. Deputy Interior Solicitor Edward Cohen, park Deputy Superintendent Larry Belli, and park Legal Affairs Specialist Elaine Hall were heavily involved in these talks. Superintendent Ring largely stayed in background because of the tribe's attitude toward him.⁹¹³

These talks between the DOI and the tribe led to a rewritten bill that was signed into law October 30, 1998, as the Miccosukee Reserved Area Act. The act gave the tribe the authority to “govern its own affairs” within the Miccosukee Reserved Area (MRA), which was made 500 feet deeper, going from 333 to 666 acres. It also gained “the exclusive right to use and develop the MRA in perpetuity . . . for purposes of the administration, education, housing and cultural activities of the Tribe.” Congress specifically stipulated that the MRA would remain part of Everglades National Park and included a number of provisions to ensure the protection of park values. The tribe was required to “prevent and abate any significant cumulative adverse environmental impact on the Park resulting from development or other activities within the MRA.” The act clearly stated that the tribe would take no action within the MRA that would interfere with the “quantity, timing, or distribution” of water flows into the park. The tribe was to develop procedures for outside comment on actions that potentially affected the environment and to set water quality standards at least as restrictive as those for the park. The act imposed height limits on buildings within the MRA and required the tribe to consider the effects of any structure on the visual experience from the Shark Valley visitor area. The Corps of Engineers was required to consult with the DOI before granting section 404 permits for the MRA. The NPS probably conceded more in the final text of the act than it would have liked, but the Miccosukee were widely seen as having suffered historically and there was considerable pressure to accommodate their desires. The agency made sure that the language protecting water flows from WCA 3 across the MRA and into the park was part of the act. When the bill cleared the House, Congressman Hastings stated that it provided the Miccosukee “what we promised them when we passed the park bill in 1934.”⁹¹⁴

⁹¹³ H.R. 3055, A Bill to Deem the Activities of the Miccosukee Tribe on the Tamiami Indian Reservation to Be Consistent with the Purposes of Everglades National Park, Nov. 13, 1997; S. 1419, Nov. 7, 1997; Asst. Sec. for Fish, Wildlife and Parks to Congressman James V. Hansen, May 5, 1998, EVER 56572, ser. II; Lawrence Belli, interview by author, June 27, 2012; Elaine Hall, interview by author, June 28, 2012.

⁹¹⁴ Miccosukee Reserved Area Act, P. L. 105–313; Richard Ring, interview by author, July 18, 2012; 144 Cong. Rec. H10588 (Oct. 12, 1998); Lawrence Belli, interview by author, June 27, 2012; Elaine Hall, interview by author, June 28, 2012.

Passage of the 1998 Miccosukee Reserved Area Act did not magically transform the park's relationship with the tribe. Cooperation between park staff and the tribe on law enforcement matters and fire management continues to be strong. The major issues continue to be those involving development on the reserved area. It also seems that the tribe at times blames the NPS for action by other government agencies. High water levels in Water Conservation Area 3, for example, are chronically opposed by the tribe, but they are the result of decisions by the Corps and the SFWMD, not the NPS. The preferred alternative in the park's draft general management commits the service to making the effort to work cooperatively with the tribe to coordinate educational and other efforts.⁹¹⁵ Relations between the tribe and the park have improved somewhat in recent years, but the legacy of suspicion built up over decades has not disappeared.

The continuing frustration of some Florida Indians with the presence of Everglades National Park in their ancestral domain was highlighted in a 2008 incident. On the morning of March 19, Cecil Osceola, unaffiliated with either the Miccosukee or Seminole tribes, arrived at the park's Shark Valley entrance at the wheel of a large front loader. Osceola was wearing a traditional patchwork shirt and moccasins. He told rangers that he intended to start building a house in Shark Valley at 11 a.m. and showed them a document from 1960 that he said gave him the right to build there. After discussions with park rangers and two Miccosukee tribal police officers, Osceola agreed to talk with Superintendent Dan Kimball. The superintendent was contacted at a meeting at the South Florida Natural Resources Center and drove immediately to Shark Valley. Osceola seems to have anticipated negotiations since he brought his own chair with him. Kimball and Osceola spoke for some time. Osceola left when the superintendent agreed to personally look into the question and meet with him again. In a later meeting, Kimball showed him three sites in Big Cypress National Preserve where he could build, and Mr. Osceola accepted that solution. Dan Kimball concluded that getting along with park neighbors at times required a willingness "to just stick in there and keep talking."⁹¹⁶

⁹¹⁵ *Draft GMP*, 73.

⁹¹⁶ "Native American Asserts Land Claim in Park," printout from Inside NPS website, Mar. 2008; Dan Kimball, interview by author, Jan. 18, 2012.

Relationship with Seminole Tribe of Florida

The reservation land of the Seminole Tribe of Florida does not adjoin Everglades National Park, and the park has limited contacts with this tribe. The park offers consultation opportunities to the tribe on various planned actions, but the tribe rarely engages in active consultation. The tribe is vitally concerned with the overall hydrological and ecological situation in South Florida and has a number of outstanding issues with the SFWMD. The park superintendent's main interaction with the Seminole Tribe is in connection with multi-agency bodies where both the park and the tribe are represented.⁹¹⁷

White Residents

At the 1947 establishment of Everglades National Park, the NPS confronted a small white population within the park boundary that the agency believed was incompatible with administering the area for the nation's benefit. A number of the residents were descendants of the pioneering families who moved to the area around 1900. Nearby residents were accustomed to hunting, trapping, and fishing virtually without restraint in the Everglades and adjacent waters. From the perspective of many local residents in the late 1940s into the 1980s, the history of NPS management of the area largely unfolded as a story of losing one by one many of their customary uses. The NPS, on the other hand, had a mission to preserve the park as wilderness and protect its resources. The NPS embarked on a series of measures over the decades—displacing Flamingo residents, enforcing game laws, eliminating commercial fishing, ending agriculture in the Hole-in-the-Donut, expanding the park into the East Everglades—that left a legacy of bitterness among some South Florida residents. No community, however, has uniform opinions, and it should be remembered that other local residents supported the park's protective measures.

The serious cultural divide that separated NPS professionals and many Everglades residents fairly jumps from the pages of agency documents from the 1940s and 1950s. NPS Chief of Development Thomas C. Vint described Flamingo as a “seacoast slum” and its citizens as “human flotsam” (figure 19–5, a vanished way of life at Flamingo). Regional Director Allen noted:

⁹¹⁷ Dan Kimball, personal communication, Oct. 15, 2014; Fred Dayhoff, personal communication, Oct. 13, 2014.

Bit by bit we are removing from the national park area those troublesome characters who spearheaded the sabotage of the wildlife features. . . . Our men have gone to places like Flamingo and even more isolated shore line camps on the Gulf coast and day or night they have faced without fear characters who would need no motive to kill a man.⁹¹⁸



Figure 19-5, a vanished way of life at Flamingo

NPS officials valued order, cleanliness, and strict adherence to the law. They had little understanding of the Everglades way of life, which was decidedly informal and relied on natural resources for subsistence and cash income, regardless of regulations made in remote places, such as Tallahassee or Washington, DC. NPS authorities were slow to grasp that Everglades residents had their own understanding of the environment gained through years of living on the land, and that some of their practices, such as burning uplands, actually were beneficial. Superintendent Beard was half-amused and half-appalled by Flamingo nicknames: “Boob” Weeks, “Barrelhead” House, “Cootie” Roberts, and others he was unwilling to commit to paper. In a 1952 article in *National Parks Magazine*, Beard acknowledged that Flamingo residents “knew something of plain, practical conservation,” but they devoted more attention to other practices, such as distilling “aquadent,” a strong spirit made from sugarcane, and shooting white ibis, locally known as Chokoloskee chicken.⁹¹⁹

⁹¹⁸ Supt. Beard to RDR1, Apr. 23, 1949, EVER 22965; RDR1 Thomas Allen to Dir. Drury, Aug. 16, 1950, NARA II, RG 79, NPS Dir. Recs., Drury, box 7.

⁹¹⁹ Daniel B. Beard, “Return of the Gill Net to Florida Bay,” *National Parks Magazine* 26, no. 110 (July–Sept. 1952), 110–11, 130. Lloyd House got the nickname Barrelhead because he paid “cash on the barrelhead” for fish that others caught. James H. Parker, Narrative of James H. Parker Regarding Everglades National Park, Nov. 20, 1997, EVER-00886.

In the early decades, some local residents threatened park personnel although no assaults ever occurred. Others harassed them in large and small ways. Superintendent Beard referred to airboatmen “circl[ing] around our boats and practically thumb[ing] their noses at our feeble attempts of law enforcement.” In 1951, the park entrance gate and sign were destroyed, and the park plane was burned in its hangar in 1961.⁹²⁰ Fire Management Officer Rick Anderson, who grew up in the area, has spoken of the complicated relationship with the NPS presence:

These Park Service actions were seen as incursions onto our land, even though everybody knew full well that it wasn't ours. But it was our way of life, I think, that was being threatened. One thing that was really clear to us early on was that the rangers didn't know the backcountry anywhere near as well as we did. Being mischievous, as teenagers, we gave the rangers a pretty hard time. For example, if we found their boats tied up somewhere we would just untie them. [Limiting the mobility of the rangers] was helpful to other people that we knew who were doing other things in the backcountry of the Everglades. You can maybe see it as a great irony—or maybe coincidence—that I went to work for the same outfit that I “tortured.”⁹²¹

Farm operators and some migrant laborers protested when agriculture was ended in the Hole-in-the-Donut. Large-scale farming began there only in the mid-1950s with the use of rock-plowing. Scattered tomato farming was done as far back as the 1910s but on limited acreage and only in relatively dry years. The end of agriculture affected a relative few; nevertheless, a reporter for the *South Dade News Leader* saw a pattern:

If Everglades National Park has its way, come June 30, “Donut Tomatoes” will pass into the obscurity already assigned by the park to such facets of human history in the area as buttonwood charcoal kilns, stilt-mounted fishermen's houses, Ingraham Highway, Royal Palm State Park and other vestiges of humanity in the park over the last 150 years.⁹²²

The elimination of commercial fishing at the end of 1985 provoked considerable local anger, especially in Everglades City. The NPS believed that by giving six years' notice of the step it was allowing enough time for fishermen to make the transition to other livelihoods. Locals argued that they had no other viable occupations, and few were willing to move away to find work. Kenny Brown, a third generation Chokoloskee resident, observed, “Maybe this generation is supposed to move away, but we have roots set down. The Browns are buried here. Where are we supposed to go?” Buddy Roberts,

⁹²⁰ Supt. Beard to EVER staff, May 19, 1952, NARA Ph, RG 79, 79-58-A-360; SMR, June 1951.

⁹²¹ Thomas Richard Anderson, interview by author, Sept. 26, 2013.

⁹²² “June 30—That's Deadline for ‘Donut’ Farming Halt,” *South Dade News Leader*, June 9, 1975.

who had been forced out of Flamingo, cited the promises about fishing made back in the 1930s. Later, some Everglades residents would claim they were somehow forced to deal drugs when commercial fishing was banned in the park. Undercutting that argument is the fact that residents got into the drug trade in 1978 or earlier, before the fishing ban was announced. Jack Morehead, superintendent at the time of the drug busts, noted that the fishermen's case for reopening commercial fishing in the park was seriously undermined when the extent of the drug activity among fishermen was revealed. Nonetheless, the fishing ban was seen by some as an example of NPS bad faith.⁹²³

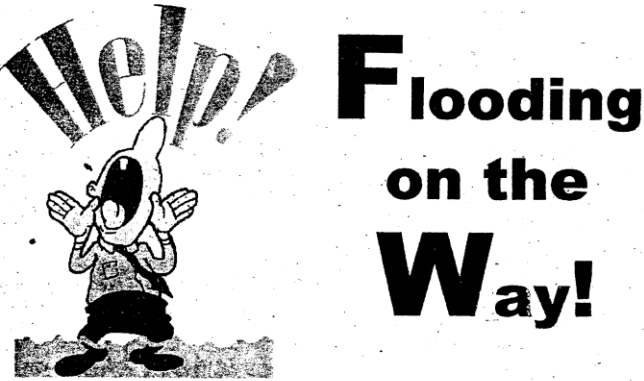
Another source of conflict arose in the 1980s when it became clear that an area of more than 100,000 acres on the northeast boundary of the park was critically important for maintaining water flows into the park. Known as the East Everglades, this area lay south of the Tamiami Trail and west of Krome Avenue. Local residents were accustomed to hunting in this area, using airboats and establishing camps on hammocks and other high ground. In the southeastern portion of the East Everglades, a number of individuals had built houses and established plant nurseries. This area west of the L-31N perimeter levee and just north of Southwest 168th Street was called the 8.5 Square Mile Area. As the NPS moved to get congressional approval to purchase most of the East Everglades and add it to the park, some locals again protested the demise of traditional uses of the land. One member of the Airboat Association of Florida wrote about a camp on Crandon Hammock that could accommodate up to twenty "rowdy rednecks" during hunting season:

Take a good look 'cause the camp will be destroyed by the National Park Service very soon. Even though man has utilized this hammock for centuries, the NPS has always maintained the erroneous notion that the "natural state" excludes humans.⁹²⁴

The use of the term redneck in this post underscores how some locals felt they were looked down upon by the NPS, the South Florida Water Management District, and other agencies.

⁹²³ "Buddy Roberts: Fighting for His Homeland with National Park Service," *Miami News*, June 18, 1980; "Welcoming Mr. Matthiessen," *Miami Herald*, Nov. 8, 1997; "Renegade as Wild as the Glades," *Miami Herald*, June 18, 1995; John Morehead, interview by author, July 16, 2012.

⁹²⁴ GatorDan, "Crandon Hammock," printout of a web post, 1990s, EVER-00955.



**Flooding
on the
Way!**

WHAT'S MORE IMPORTANT ?
**Water in your living room or
the Cape Sable Seaside Sparrow ?**

The Corps of Engineers and the Department of Interior have been working for several years to find a way to manage water in the Everglades so as to protect the habitat of the Cape Sable Seaside Sparrow (an endangered species) while still providing flood protection for the citizens of the area. Their differences were so great that a professional facilitator had to be called in to mediate between the two agencies. No local interests were allowed to participate.

Out of that mediation came a proposed Environmental Impact Statement that endorses a solution that will pump more water into South Miami-Dade County canal system. **That's BAD !** More water in the canals means less capacity to absorb and drain storm water and more likelihood that your homes and fields will be flooded — again and again and again.

The Corps will hold a public meeting in Homestead to discuss this issue. It will be held Monday, October 29, 2001 at 6:30 pm in the Cooperative Extension Office at 18710 SW 288th Street. If you are sick and tired of being flooded, it's time you tell the Corps, the Fish and Wildlife Service, the Department of Interior and the South Florida Water Management District that enough is enough!

DADE COUNTY FARM BUREAU
1850 Old Dixie Highway
Homestead, Florida 33033
305-246-5514

Figure 19-6, "Flooding on the Way"

In the 8.5 Square Mile Area, a fight raged for more than two decades over the fate of the community (figure 19-6, "Flooding on the Way"). Many of the 600 plus East Everglades residents were of Cuban origin, and some charged they were the victims of ethnic discrimination. As resident Lorraine Valladares put it in a public meeting: "This is the only house my husband, who is Cuban, has. He had one in Cuba, but they took it. So are you going to take this one?" In the end, a compromise was reached where most of the community was protected with levees, while residents of the western portion were bought out so the land could be flooded.⁹²⁵

⁹²⁵ Kirk Semple, "The Last Frontier," *Miami New Times*, Jan. 5-11, 1996.

Local attitudes toward the park have changed over time. Almost all of the displaced Flamingo residents are now dead, and the commercial fishing fight ended almost three decades ago. Time has somewhat softened the blows. As golf courses, condominiums, and shopping malls proliferate, more residents have come to believe that there was a value in setting aside Everglades National Park. Old-timers still laugh at some park efforts, but there may be more understanding. Rick Anderson has put it this way:

I do have an elderly uncle who asks “Is the government still paying you to set them palmettos on fire?” I say yes, they are. Then he says, “You know, we used to do that for free, but they called it a crime.” But, people know what’s going on with the map of Florida. It’s come to where Florida—the new Florida—has come up to the boundaries of their world.⁹²⁶

Spanish Speakers

Since 1960, an influx of Spanish speakers has dramatically changed the demographics and cultural contours of South Florida. From 1960 to 2011, Miami-Dade County’s population of Hispanic origin grew from about 50,000 (5.3 percent) to 1.6 million (64.5 percent). The initial wave of immigration was from Cuba, but in recent decades there has been substantial immigration from Mexico and Central America and some from Puerto Rico and South America as well. Generalizations are perilous, but in the main, the new Spanish-speaking population had different traditions of park usage and limited connections to Everglades National Park. Use of Everglades National Park by people of Hispanic origin has remained low. A visitor use survey conducted in 2008 showed that 7 percent of winter visitors and 5 percent of spring visitors were Hispanic. The questionnaire used in the survey was not distributed at the Chekika Day Use Area, which is used heavily by locals of Hispanic background; Hispanics thus may have been undercounted. The South Florida Hispanic population is overwhelmingly urban, and many members may have concerns about safety in the unfamiliar terrain of the Everglades.⁹²⁷

In recent decades, the park has sought ways to engage this population. Given the political and economic power of citizens of Hispanic origin in many areas of Florida, their support for park values will be important in achieving future goals, notably maintaining a commitment to Everglades restoration. Initial efforts focused on translating park interpretive materials into Spanish and have since expanded to steps, such as the formation of the South Florida

⁹²⁶ Thomas Richard Anderson, interview by author, Sept. 26, 2013.

⁹²⁷ U.S. Census Bureau, <http://quickfacts.census.gov/qfd/states/12/12086.html>; Finnerty interview; Eleonora Papadogiannaki, Nancy C. Holmes, Michael A. Schuett, and Steven J. Hollenhorst, *Everglades National Park Visitor Study, Winter and Spring 2008* (Moscow, Id.: University of Idaho Park Studies Unit, Nov. 2008), 17, <http://www.nps.gov/ever/parkmgmt/upload/EVER%20Visitor%20Study%202008.pdf>.

National Parks Trust (see Chapter 22). The NPS has made a conscious effort to recruit leaders from the Hispanic community for the trust's board of trustees. The 2007 reopening of the Chekika Day Use Area was well received by the local community; unfortunately, the area had to be closed for budgetary reasons in December 2013.⁹²⁸

Haitians

South Florida is home to a sizable population of Haitian immigrants. In 2010, Miami-Dade County had 118,000 residents of Haitian origin and Broward County had 102,000. Little research seems to have been done on the attitudes of Haitian Americans toward national parks in general or Everglades National Park in particular. Another predominantly urban population, Haitians may share an unfamiliarity and uneasiness with the broad natural areas of the park. Some Haitians practice a syncretic religion known as vodou, which can involve sacrificing animals, usually chickens, goats, or pigs. From time to time, park rangers have discovered the remains of animals along the park border, either just inside it or, more frequently, just outside. These are believed to be related to the practice of vodou. To serve visitors of Haitian heritage, the park has translated a number of materials, including its Junior Ranger activities guide, into Haitian Creole.⁹²⁹

The 1996 Social Science Research Plan

Aware of the many issues posed by the large, growing, and diverse surrounding communities, Everglades and the other South Florida National Parks in the mid-1990s undertook a social science research plan. The plan was prepared by the NPS Social Science Program in cooperation with the Florida Atlantic University/Florida International University Joint Center for Environmental and Urban Problems. The plan's goals were to identify social science research needs; propose a research agenda and specific research projects; and advance a strategy, schedule, and budget for the projected research. In developing the plan, the team preparing it conducted six workshops attended by NPS managers, scientists, local officials, and interested citizens. Only twenty-seven people participated in the three workshops that were open to the public. Research recommendations focused on obtaining substantially more information on park visitors, community and stakeholder populations, and the socioeconomic impacts of the parks. Everglades National Park was interested in gaining more data on foreign visitors and the park's visitor carrying capacity. The total cost of

⁹²⁸ Maureen Finnerty, interview by author, June 20, 2012; Dan Kimball, interview by author, Jan. 18, 2012.

⁹²⁹ Center for the Study of Brooklyn, *Haitian Demographic Information*, Jan. 2010, http://www.brooklyn.cuny.edu/pub/departments/csb/documents/csb/Haitian_Demographic_Information.pdf; R. Bruce Gantt, personal communication, Oct. 10, 2014.

implementing the recommended research was \$546,000 (\$789,000 in 2012 dollars). Little of the research suggested in the plan has been carried out to date.⁹³⁰

⁹³⁰ Gary E. Machlis, Jean E. McKendry, and Michele E. Correia, *A Social Science Plan for South Florida National Park Service Units* (N.p.: National Park Service, October 1996), <http://www.nature.nps.gov/socialscience/docs/archive/SFlorida.pdf>.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 20:
Interpretive and Educational Programs

Chapter 20: Interpretive and Educational Programs

Interpretive efforts at Everglades National Park are shaped by the nearly universal recognition that the Everglades is a subtle landscape, without the awe-inspiring geological features of most western parks. NPS interpretive planners repeatedly have observed that visitors need to be educated to appreciate the nuances of Everglades environments. This 1978 observation is representative: “Visitors are generally unprepared to understand and appreciate the fascinating though subtle, values of the Everglades.”⁹³¹ Planners also understood that wildlife, particularly the wading birds in winter, would always be a primary draw. In the park’s first three decades, managers sometimes took extraordinary steps to ensure an adequate wildlife display. The NPS was surprised when strong summer visitation developed in the 1950s. This led them to emphasize broader ecological relationships in the summer, when the wildlife show was less dazzling. For decades, the natural environment was the overwhelming focus of interpretation. At Everglades, the park naturalist had responsibility for interpretation until 1982, when a new position, chief of interpretation, was created.⁹³² In recent decades, the human occupation of the Everglades gained a larger role in the interpretive program. As the implementation of the Central & South Florida water control plan degraded conditions in Everglades National Park, park managers increasingly relied on interpretation as a broad educational tool. Interpreters sought to explain the ecological relationships of South Florida and the dependence of human communities on nature. The aim was to use the interpretive program to build a broad constituency in Florida for responsible development and environmental protection. This constituency-building goal was a big factor in Everglades developing the most vigorous and long-lived environmental education program within the service.

Early Interpretive Efforts and Planning

Preoccupied with asserting authority over the park and lacking funds, Superintendent Beard and his small staff relied heavily on others in the early years for interpretive efforts. The Tropical Audubon Society began offering bird-watching tours in the Everglades National Wildlife Preserve during the winter 1946/47 season. These continued after the park’s establishment and were a significant form of personal-service interpretation for several years. Charles M. Brookfield, long-time president of Tropical Audubon, led many of these tours. As of winter 1950–1951, Audubon was offering one- and two-day tours at \$10 and \$20, respectively, exclusive of food and lodging. Tourists

⁹³¹ Everglades National Park Division of Interpretation, Project Briefing Book, EVER 58222.

⁹³² Everglades’ first park naturalist was Willard E. Dilley, who was promoted from ranger to that position in July 1948. In March 1955, Ernst T. Christensen became park naturalist, remaining in the position until July 1966. Christensen played a major role in developing the park’s initial interpretive program. SMR, July 1948 and Mar. 1955; Ernst T. Christensen, “In a Sense This Is a Swan Song,” *The Anhinga*, July 1966.

were driven by station wagon to Coot Bay and Key Largo and then taken on boats to rookeries and other locations (figure 20–1, an early Audubon boat tour). Superintendent Beard praised Audubon’s tours, which continued through the winter of 1961/62. The tours, however, served only a few visitors, and the NPS was eager to establish its own interpretive program.⁹³³



Figure 20–1, an early Audubon boat tour

The Everglades National Park Commission produced the first park brochure, which became available in May 1948. Superintendent Beard was the primary author with some help from John Pennekamp. The four-page brochure acknowledged that the park was in a formative stage and lacked facilities. The Everglades was touted as “essentially a biological park which will feature unique vegetation and wildlife.” The copy also stressed the damage inflicted by fire, hunting, trapping, and plant collecting and urged visitors to help protect park resources. The first park brochure produced by the NPS was available in January 1951. When possible, rangers handed out the brochure from a chickee-style checking station at the park entrance on Pine Island (figure 7–14).⁹³⁴

⁹³³ “Audubon Unit Provides Tour in Everglades,” *Chicago Tribune*, Dec. 17, 1950; Daniel Beard, Special Report on Concessions at Everglades National Park, July 28, 1953, NARA Ph, RG 79, 79–62-A-420; SMR, Nov. 1962.

⁹³⁴ NPS, “Everglades National Park, Florida,” May 1948, NARA Ph, RG 79, 79–58-A-360; SMR, May 1948 and Feb. 1951.

Royal Palm State Park on Paradise Key long had been the focus of visitor activity in the Everglades. The NPS understood the attraction of this area and realized that it would be years before it could build visitor facilities elsewhere in the park. By winter 1949/50, the park had a visitor contact station and temporary museum in the existing Royal Palm Lodge. A highlight of the exhibits was a Seminole dugout discovered by Superintendent Beard's son, Daniel C. Beard. Also open were the nearby Gumbo Limbo and Anhinga Trails, the latter partially raised on a boardwalk above the marsh. The first park naturalist, Willard E. Dilley, and rangers led tours on these two trails when they could; otherwise visitors relied on a mimeographed sheet. Beard noted that the Anhinga Trail gave "the park visitor his first opportunity for intimate contact with the wildlife of the area [and] has . . . exceeded our expectations in its public appeal. . . . The wildlife of the area . . . performed, grunted, squawked, and wallowed with increasing lack of fear before a most appreciative audience." The park could only estimate visitation until it installed road counters in January 1949, when 13,000 visitors were reported. (Appendix B contains yearly visitation figures.) Winter Sundays brought as many as 500 visitors to Royal Palm.⁹³⁵

The wildlife show has always been a big draw at the park, and park managers worked to make it worthwhile. Superintendent Beard struggled to keep fish in the pond at Royal Palm. His solution has entered the lore of the Everglades:

Another sign is at Royal Palm where fishermen kept catching our "exhibit" specimens. Warning signs did not help. We tried talking to people and they often became irritated. So, several small signs at water level height were put out. They showed an egret eating a fish and bore the legend: "Fishing within one mile of Royal Palm Station is reserved for the birds." We have had no fishermen or trouble of any kind since.⁹³⁶ (figure 20-2, fishing reserved for the birds)

In the dry years of the 1960s, the park resorted to other measures to maintain a wildlife display. As early as February 1962, park staff pumped groundwater into the pond and slough at Royal Palm to keep birds and alligators from abandoning this heavily visited area. Very rarely, visitors or their pets got too close to the wildlife show. In summer 1959, for example, a small dog jumped into the pond at the Royal Palm Visitor Center. "An alligator and the visitor reached for the dog at the same time. The dog escaped the 'gator, but the visitor was caught and received minor lacerations."⁹³⁷

⁹³⁵ SMR, Jan. and Dec. 1949.

⁹³⁶ Supt. Beard to RDR1, Aug. 2, 1954, NARA Ph, RG 79, 79-62-A-305. Chief Ranger George Fry noted that in 1952-1953, "Hot Shot" Lund and his wife Flossie operated the Coot Bay concession for the company.

⁹³⁷ SMR, Aug. 1959 and Feb. 1962.



Figure 20-2, fishing reserved for the birds

Beginning in December 1950, National Park Concessions, Inc., which operated in other national parks, ran a gas station and snack bar at Coot Bay. Sportfishing charter boats and sightseeing boat tours also were available, with rangers providing interpretation on the sightseeing cruises when possible. All visitor reception activity at Coot Bay ended when the Flamingo complex opened in December 1957. Bus companies based in Miami, such as Greyhound and Grayline, brought visitors into the park on tours. Presumably any interpretation was provided by the tour operators; there is no record of rangers being involved.⁹³⁸

The NPS produced a number of documents in the park's early years that touched on interpretive planning. These included an interpretive development plan as part of the first master plan, which was approved in January 1953, and a 1957 museum prospectus. A major planning assumption was that most visitors would enter the park from the east, using state route 27, which branched off U.S. 1 at Florida City.⁹³⁹ Other key points were that the main visitor center at the park entrance, when in place, would give visitors a brief orientation to the park and its values; that many visitors would guide themselves through the park, relying on brochures and wayside markers; and that Royal Palm and Flamingo would be the two spots offering more in-depth visitor experiences, including museum exhibits, self-guiding trails, and ranger-led activities. The NPS planned eventually to have a good-sized visitor center along the Tamiami Trail, while Everglades City and Key

⁹³⁸ SMR, Feb. 1948, Dec. 1950, and Feb. 1952.

⁹³⁹ State route 27 from Florida City to the park was renumbered route 9336 in 1984.

Largo were seen as secondary entrances to the park with more limited visitor contact stations and exhibits. The park began to implement its interpretive plans with the two trails at Royal Palm and a small museum at the new Royal Palm station, which opened in December 1951. The exhibits in this first NPS-constructed visitor facility included some of Superintendent Dan Beard's paintings of birds.⁹⁴⁰

When the park opened, NPS managers anticipated that summertime visitation would consist largely of local fishermen. They expected to be able to bring on seasonal rangers for the winter season and give out self-guiding brochures the rest of the year. By summer 1953, Superintendent Beard was noting that his small permanent staff was under significant strain from the unexpected stream of hot-weather visitors. Summer talks by rangers are first mentioned in 1957; they emphasized the ecological relationships of the Everglades, largely because wildlife was hard to find in the summer. As described in Chapter 7, park planners initially expected that visitors would have little interest in camping, but soon learned otherwise. As in other parks, campgrounds became the locus for campfire talks and other ranger programs.⁹⁴¹

Following these early initiatives, the park's interpretive programs expanded greatly. The development of the various types of interpretation are examined below.

Personal Services

From its earliest days, the NPS believed that visitors are best served by personal contacts with rangers. Museum exhibits, waysides, and literature all had their roles, but a lasting connection between visitor and park was most effectively made through face-to-face interaction. In the words of the 1959 Mission 66 Prospectus for Everglades: "The highest form of visitor service is that rendered by a well-trained, competent man in the uniform of the National Park Service." Note that an all-male ranger force was assumed. Everglades National Park through the years has relied on a core of permanent interpretive staff and a (usually) larger contingent of seasonal employees in the winter months. When agency budgets grew tighter, the park relied increasingly on lower-salaried park guides and then volunteers, rather than rangers, for visitor orientation and some personal service interpretation. The park has consistently emphasized training for seasonal employees and volunteers. Training for seasonals, originally one week and two weeks as of this writing, typically takes place in December at the beginning of the winter season. Park naturalists and scientists have consistently been involved in the training, getting seasonals out in the field to help them understand the various Everglades environments. The training also

⁹⁴⁰ SMR, Oct. and Dec. 1951; Supt. Beard to RDR1, Dec. 14, 1951, NARA Ph, RG 79, 79-58A-360; Revised Interpretive Development Outline, June 26, 1958, NARA Ph, RG 79, 79-68-A-636.

⁹⁴¹ SMR, Apr. 1957 and Aug. 1959.

aims to take seasonals to all the main public access points, so that a seasonal based at Flamingo, for example, can let a visitor know what is available at Shark Valley and Everglades City.⁹⁴²

Personal service interpretation began in Everglades National Park with traditional activities, such as ranger nature walks and campfire programs (figure 20–3, visitors on Anhinga Trail, 1950s). As mentioned above, ranger-naturalists also gave talks on sightseeing tour boats. By around 1970, ranger-led programs had expanded to include venturing away from marked trails. These adventures, known as slough slogs and swamp tromps, allowed “visitors to explore the park slowly, quietly and at close range.” Another opportunity to experience the “real” Everglades were guided overnight backpack trips, where a ranger led groups of up to fifteen visitors on a six-mile hike to a hammock campground.⁹⁴³ Isolated from urban light pollution, areas, such as Flamingo and Mahogany Hammock, lend themselves to star-gazing. Special astronomy-oriented programs have been offered, particularly in January and February 1986, when Halley’s Comet made its appearance.⁹⁴⁴



Figure 20–3, visitors on Anhinga Trail, 1950s

⁹⁴² Mission 66 for Everglades National Park, August 1959, NARA Ph, RG 79, 79–66-A-661; Allyson Gantt, interview by author, June 1, 2012.

⁹⁴³ Resume of Interpretive Operations, Jan. 30, 1976, EVER 22965; “A Look at the Real Everglades,” *Miami News*, Jan. 3, 1980.

⁹⁴⁴ “Tonight is Comet’s Last Hurrah This Century,” *Miami Herald*, Apr. 10, 1986.

In the 1950s, the park had just two to three permanent interpreters, designated as naturalists, and three or four seasonals, known as rangers or ranger-naturalists. The permanent and seasonal staffs grew steadily in the 1960s and 1970s, reaching highs of around a dozen permanents and forty seasonals by the mid-1970s. In the late 1990s, the number of permanents and seasonals in the interpretive division were close to equal. When budgets for interpretation were cut, the park at times had to reassign interpreters to other park divisions, but usually was able to bring them back to interpretation eventually. Beginning in the 1960s, the park began hiring lower-salaried park aides to staff the visitor centers. Some aides were women, the first women in NPS uniforms at the park (figure 20–4, park receptionist and naturalists, 1960s). In the 2000s, volunteers took on an increasing share of the interpretive load; in 2007, volunteers accounted for more than 14,000 hours of interpretive activity.⁹⁴⁵



Figure 20–4, park receptionist and naturalists, 1960s

Visitor Contact Points/Museum Exhibits

As funding from the Mission 66 program became available, development continued at Everglades National Park (see Chapter 7). The Flamingo Visitor Center and its museum exhibits opened to the public in December 1957 and had 13,000 visitors in its first month of operation. At the time, the NPS saw this as the major museum in the park. Themes

⁹⁴⁵ SMR, Feb. 1956 and July 1958; Acting Supt., ENP, to Dir, Apr. 10, 1970, HFC; SAR, 2007; Servicewide Interpretive Reports for Everglades National Park, 1999 through 2010.

covered in the exhibits were “geology, hurricane influence, ecology of Cape Sable, ecology of a bird rookery, web of aquatic life, rare species, the white man in the area, plume hunting, and a summary of the general park story” (figure 20–5, Flamingo exhibits, ca. 1960). Given the many themes, the treatment of each was brief. Everglades Park Company operated all of the concessions at Flamingo: the motel, restaurant, gift shop, marina, boat rentals, and sightseeing boat rides. The boat tours were two hours in length, initially cost \$3.00, and featured talks by rangers or concessionaire personnel.⁹⁴⁶

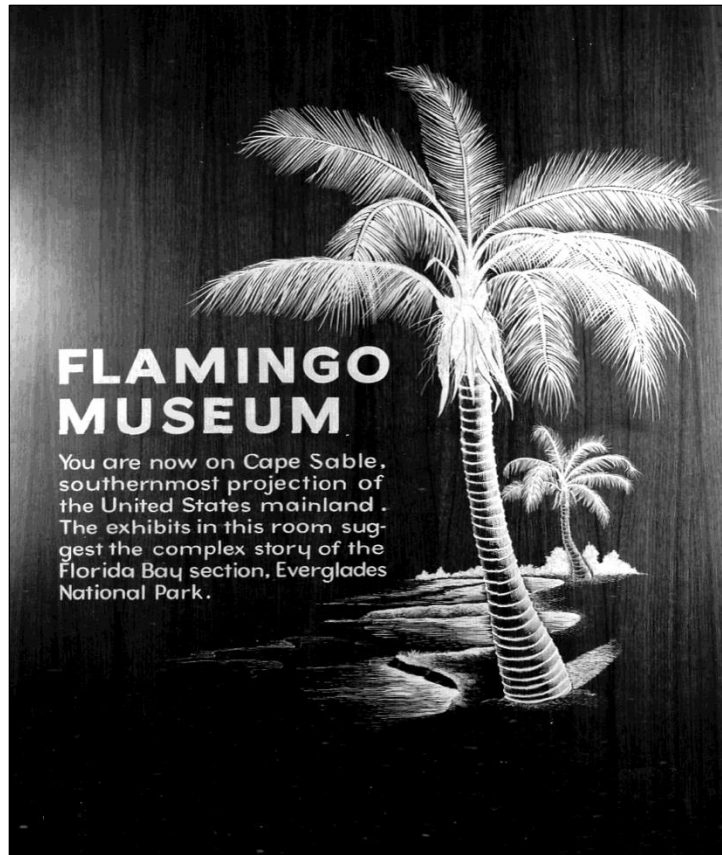


Figure 20–5, Flamingo exhibits, ca. 1960

A novel interpretive feature begun in the late 1950s that gained national attention were ranger-led Boat-a-Cades. These seven-hour tours for private motorboat owners left winter mornings from Flamingo at 9 a.m. and followed a sixty-five-mile route through inland waterways on the park’s west side. The tours sometimes also left from Everglades City. The park reduced damage to resources by limiting participation to small boats with a draft of two feet or less (figure 20–6, Boat-a-Cade). The Boat-a-Cades continued through the winter of 1964/65 at least. As early as 1966, Everglades Park Company, the Flamingo

⁹⁴⁶ Museum Prospectus and Interpretive Plan, July 1956, NARA Ph, RG 79, 79–68-A-636; “Deep in the Florida Everglades,” *New York Times*, Dec. 8, 1957; George Hartzog, Acting Chief, Concessions Management, to Carroll E. Shoop, Sept. 11, 1952, NARA Ph, RG 79, 79–62-A-420.

concessionaire, was offering tram excursions on park roads, such as the Rowdy Bend Road and Snake Bight Road. These trips had either an NPS or concessionaire interpreter and operated into the 1990s.⁹⁴⁷



Figure 20-6, Boat-a-Cade

The service replaced the museum exhibits at Flamingo in 1985–1986, with the fabrication handled by Creative Dimensions, Inc. At this time, staff discovered that an Audubon print of a great white heron, on display since the museum opened, was a hand-colored lithograph from the original Havell edition of 1835. The print was sent to the Harpers Ferry conservation lab and then placed in curatorial storage.⁹⁴⁸

Royal Palm Hammock and the Anhinga Trail have remained premier visitor attractions throughout the park's history. The Anhinga Trail was substantially lengthened in 1961. In 1979, the service redid the exhibits at the Royal Palm Visitor Center. These new exhibits included four wall and four ceiling panels with reproductions of wildlife paintings by noted modernist artist Charley Harper. Reproductions of his art also adorned panels along the Anhinga and Gumbo Limbo trails.⁹⁴⁹

⁹⁴⁷ "Boat-a-Cade in Everglades Set Saturday," *Miami News*, March 30, 1961; "Boat-a-Cades Unlock Everglades Wilderness," *Motor Boating*, Oct. 1962, 37.

⁹⁴⁸ SAR, 1975, 1985, 1988, 1995; SMR, May 1966.

⁹⁴⁹ SMR, Nov. 1961; SAR, 1979; ENP Wayside Exhibit Plan, 1984, EVER 22965.

Main Entrance (Parachute Key) Visitor Center

Interpretive planners in the 1950s saw the visitor center just outside the park entrance station as a place where visitors would receive a brief orientation to the park. When the visitor center opened in 1961, it featured a high-ceilinged space, 74 feet by 146 feet in plan, which was not air conditioned. The space was divided between a 120-seat auditorium and a visitor contact/exhibit area. In the early years, an introductory slide show ran in the auditorium. Because of the high light levels, no artifacts could be displayed, and exhibits featured photographs of the park's major natural areas: sawgrass marsh, a tree hammock, pineland, and Florida Bay. Hurricane Betsy in September 1965 damaged the visitor center, which was closed for repairs and remodeling until May 1966. A large painted mural of the Everglades ecosystem by Bernhard P. Thomas was the highlight of new exhibits installed at that time (figure 20–7, Bernhard P. Thomas at work on the mural in the visitor center). The NPS selected Thomas from thirty-four artists in a competition. The artist flew over the park, visited the backcountry in an airboat, and spent forty days painting the mural while visitors observed him. Thomas was told to represent salinity, elevation, temperature, and fire in his work. He did so by depicting the park's major terrestrial ecosystems: a mangrove forest, a sawgrass marsh, a hardwood hammock, and a pine upland during a prescribed burn. The exhibits were redone again in 1972–1973, and a film replaced the old slide program. The exhibits got another revamping in 1985. The original visitor center had to be replaced after Hurricane Andrew in 1992.⁹⁵⁰



Figure 20–7, Bernhard P. Thomas at work on the mural in the visitor center

⁹⁵⁰ Museum Specialist Sutton to Chief, Museum Branch, WASO, Nov. 4, 1958, HFC; “Everglades Visitor Center Open for Business,” *New York Times*, Jan. 22, 1961; SMR, May 1966; SAR, 1972, 1985, and 2004; Audio of a talk given by Thomas shortly after completing the mural, EVER 5600.

The opening of the Ernest F. Coe Visitor Center in 1996 gave the NPS a chance to provide considerably more in-depth interpretation than was provided in the 1961 facility. Just inside the entrance is an exhibit panel that orients the visitor to the park and its four other visitor centers. The ceiling in the central portion of the visitor center rises to the full height of the hip-roofed building. As the visitor enters this soaring space, her attention is drawn to two dioramas placed on a central island. A large diorama of an alligator hole tells the story of the sawgrass marshes in winter, accompanied by full-sized bird models poised as if about to alight and the recorded roar of a bull alligator (figure 20–8, exhibits in Ernest F. Coe Visitor Center). A smaller diorama interprets the Everglades in summer. Next to that is an alcove with a mural of the marsh and several spyglasses projecting from it at different heights. As a recording tells the visitor of the park’s birdlife, he can peer through a glass at backlit bird photos. An exhibit on a wall of the room provides an overview of the various ecosystems of the park. A small exhibit allows the visitor to listen to the views of various Everglades stakeholders: a farmer, homeowner, fisherman, conservationist, and ranger. The visitor center includes an eighty-one-seat auditorium for films and talks and a separate room dedicated to changing exhibits. This space frequently hosts exhibits by artists from a program called Artists in Residence in the Everglades (AIRIE) (see discussion below in this chapter). In September 2012, the park installed a freestanding vitrine that tells the story of the Nike missile base and the soldiers stationed there, using objects mostly donated by veterans.⁹⁵¹



Figure 20–8, exhibits in Ernest F. Coe Visitor Center

⁹⁵¹ Ryan Meyer, personal communication, Oct. 23, 2013.

Toward the back of the visitor center, near the exit to a raised outdoor viewing deck, is a striking mosaic map set in the floor. Each tile color represents a different physiographic region of South Florida: estuaries; freshwater sloughs, pinelands, etc. An idealized cross section of the peninsula and a color key mounted on a nearby wall help the visitor to grasp the subtleties of the different regions. Visitors get a glimpse of a large pond through a wall of glass or can exit to the deck for a better view of the pond and its vegetation. Three wayside panels interpret the origins of the park, the Atlantic Coastal Ridge, and the creation of the pond from the borrow pit that provided a foundation for the demolished and extant visitor centers.

The exhibits in the Coe Visitor Center convey a limited amount of information on the human presence in the Everglades. A small wall panel captioned “People of the Everglades” does not provide a comprehensive view of this topic, addressing only the Native American presence from the nineteenth century on. Rather than placing the Seminole and Miccosukee peoples in the context of a southeastern cultural tradition that embraced the preconquest groups in Florida as well as those farther north, the exhibit emphasizes discontinuity. The panel tells of the Tequesta and Calusa leaving Florida in the 1700s and the Seminole and Miccosukee “eventually occupy[ing] the area abandoned by these groups.”⁹⁵² Nowhere in the visitor center is there any mention of the white settlers of the Everglades, the fishing communities, truck farming on the coastal prairies, or the exploitation of tanbark and other resources. In 2013, the only way a visitor could get information on the Gladesmen and fishermen of the Everglades was by purchasing one of several books offered in the Everglades Discovery shop.

The Everglades Discovery shop, operated by the Everglades Association, offers a selection of books for adults and young readers on the natural and cultural history of the area, plus a variety of souvenir items, all of which must be approved by the park. The shop features attractive openwork metal doors depicting wildlife and birds of the Everglades, designed and fabricated by Art’s Work Unlimited of Miami (figure 24–3, Doors of the Everglades Discovery shop in Ernest F. Coe Visitor Center).⁹⁵³

⁹⁵² The tribe consulted on and approved the exhibit text, working with the park’s education coordinator, Sandy Dayhoff. Sandy Dayhoff, personal communication, Nov. 8, 2013.

⁹⁵³ Metal artists Art Ballard and Phil Heermance established Art’s Work Unlimited, Inc., in Miami in the 1980s, <http://www.artsworkunlimited.com/home.html>.

Waysides

The park's initial interpretive plan envisioned a general orientation at the main visitor center. The visitor experience would then be deepened through waysides on the main park road and the nature trails at Royal Palm, Mahogany Hammock, etc. (figure 20–9, Mahogany Hammock trailhead). A wrap up of park interpretive themes would then be provided at the Flamingo museum. In early 1962, park managers articulated this scheme, stating that “visitors start their experience of the Everglades at the Visitor Center with a road map and a viewing of either the wide screen movie or a companion slide program which give a general orientation.” Visitors then guided themselves through the park relying on waysides on the main park road and the park's six nature trails. “[T]he whole Park story is summed up in the museum at Flamingo.”⁹⁵⁴



Figure 20–9, Mahogany Hammock trailhead

Waysides along the main park road were in place soon after the road opened in 1957. Waysides on the Anhinga and Gumbo Limbo Trails had been in place for several years. By winter 1959/60, the Mahogany Hammock boardwalk trail, the Pa-Hay-Okee boardwalk trail and River of Grass overlook, the Mangrove Trail, and Coastal Prairie Pinelands Trails were in operation. The West Lake Shelter and interpretive panels were finished in September 1964. Waysides have employed various construction materials over the years. Early versions were wood or plastic. In the 1960s, many of these were replaced by “metal-photo” waysides produced by Federal Prison Industries. Another large-scale replacement of waysides occurred in the 1980s. In 2001, the park embarked on an eight-phase project to place or replace some 247 wayside exhibits along park roads and trails, using porcelain enamel panels (figure 20–10, a porcelain-enamel wayside, 2012). As early as 1972, the park was augmenting the waysides by broadcasting

⁹⁵⁴ ENHA newsletter, Jan. 1962, FNPMA papers.



Figure 20–10, a porcelain-enamel wayside, 2012

information on AM radio transmitters and renting cassette tapes that visitors could play in their vehicles. The tape was narrated by actor Eddie Albert (1906–2005), best remembered for his role in the television series *Green Acres*.⁹⁵⁵

Shark Valley

Plans dating back to the 1950s called for a full-blown visitor center at Shark Valley, but to date there has never been more than a small (approximately 1,000 square feet) facility there. The canal adjacent to the west segment of the road and surrounding marshes typically provide excellent wildlife viewing opportunities, especially in the dry season. As recounted in Chapter 7, the NPS in early 1965 opened the 14.7-mile Shark Valley Loop Road, with the striking, modernist poured concrete observation/fire tower at the turning point. At first, visitors were allowed to drive the seven miles to the tower. Rangers also led autocades to the tower and back. Shark Valley had seventeen wayside-type exhibits in these years. From 1968 to 1971, however, the area had to be closed because of persistent high water.

⁹⁵⁵ SMR, Oct. 1959, Sept. 1963, Sept. 1964, and Dec. 1964; RDSE to Supt., July 18, 1984, EVER 22965; SAR, 1972, 2001, 2007.

After extensive road repairs, the NPS decided to close the Loop Road to visitors' vehicles and offer tram tours instead. Trams began operating in March 1972. At first, interpretation came via a twenty-four-minute audio tape, but soon park interpreters were riding the trams. There was no additional charge beyond the entrance fee (\$2 in 1972) for tram rides (figure 20–11, an NPS-operated tram). Director George Hartzog was eager for the tram tours to begin, and the contracting process was rushed. Purchased from Minna Trams, Inc., the trams needed considerable modification after they arrived. Some of their problems may have resulted from the poor condition of the Loop Road. Most of the tram operators were members of the Miccosukee Tribe in this period.⁹⁵⁶ In 1974, the park purchased twenty bicycles, which were loaned free of charge to visitors for use on the Loop Road. Biking has remained a consistently popular activity on the road, with bicycles now rented out by the concessionaire. By 1981, more than 525,000 visitors had taken a tram ride. As of October 1, 1982, tram operations were turned over to a concessionaire, Gettysburg Tours, which instituted a charge for the rides. From this point, "NPS interpreters . . . operate[d] a small information center at Shark Valley, provide[d] interpretation on the trams and led guided walks." The Everglades Natural History Association (ENHA) contributed \$3,000 toward the construction of a prefabricated building and began selling publications.⁹⁵⁷



Figure 20–11, an NPS-operated tram

⁹⁵⁶ The concessioner at present employs few, if any, tribal members, largely because the tribe has grown wealthy from gaming operations and the jobs at Shark Valley are not high-paying.

⁹⁵⁷ SMR, Dec. 1966; "Shark Valley Loop Road Dedicated, Opened for Use," *South Dade News Leader*, May 16, 1972; Sandy Dayhoff, Chronology of Shark Valley, May 1, 1981, Draft Shark Valley Management Plan, Nov. 1981, EVER 22965; SAR 1982; ENHA Annual Report, FY 1983 and FY 1984, FNPMA papers; Jack Stark, interview by author, July 10, 2012.

The Shark Valley Loop Road continued to experience flooding in the wet season, and the NPS decided in 1986 to close the area so the roadbed could be elevated. The area reopened in 1987, but the ENHA bookstore did not start operating again until December 1988. In 2013, the NPS erected a new combination visitor center/concessioner office and reconfigured the parking area. With its location on the Tamiami Trail between the Miami area and the Gulf Coast, Shark Valley has continued to be a very popular destination. In addition to conducting tram tours, rangers give talks at the visitor center and on trails; they also provide interpretation on special sunset and full-moon tram tours and moonlight bicycle tours.⁹⁵⁸

Everglades City

NPS plans called for Everglades City to be the western gateway to the park, primarily for visitors with private boats or those who wanted to take concessionaire boat tours. The Collier Corporation erected an amphitheater on land in the city that it donated to the NPS, and as of January 1956, rangers were giving talks there. Because of the demands placed on park interpreters from the large visitation via the park's main entrance, the NPS could do this for just two winters and the amphitheater was abandoned. Local resident Sammy Hamilton received a concession contract to provide boat tours from Everglades City in 1959. Hamilton later incorporated as Everglades National Park Boat Tours, Inc., which continues to hold the concession contract as of this writing (see Chapter 23). Rangers provide interpretive talks on the boats whenever possible; otherwise they are done by the boat captains. An NPS boat basin and two-story ranger station/concessionaire office opened in 1967. It had very limited space for exhibits, which at first were produced by park staff. New exhibits were installed in 1987.

As the population of Florida's Gulf Coast continued to grow, the Everglades City operation was increasingly stressed. In 1980 for example, the Everglades City operation was staffed entirely by volunteers and donated time from NPS staff. The park produced a development concept plan for Everglades City in 1990 that called for the construction of a new visitor center. Congress directed the NPS to build this structure and designate it the Marjory Stoneman Douglas Visitor Center, but to date has not made any appropriation. The park did complete a \$140,000 renovation of the existing Everglades City facility, dedicated in April 1994. This project included enclosing the main floor lobby and providing elevator access to new exhibits on the second floor that focused on the mangrove belt, birds, and marine life.⁹⁵⁹

⁹⁵⁸ "Shark Valley Loop Road to Close for 6-Month Repairs," *Miami Herald*, Apr. 10, 1986; Everglades National Park Statement for Interpretation, 1985, EVER-00619; ENHA Annual Report, FY 1988, FNPMA papers; Everglades National Park Statement for Interpretation, 1995, EVER-00619; "Pedaling into the Past," *Miami Herald*, Jan. 27, 2005; Michael Jester, personal communication, Aug. 29, 2013.

⁹⁵⁹ SMR, Jan. 1956, Dec. 1957; SAR, 1981, 1985, and 1987; Everglades National Park Protection and Expansion Act of 1989, P.L. 101-229; "Everglades National Park Holds Open House at Newly Renovated Everglades City Visitor Center," NPS media release, Mar. 29, 1994, EVER-01385; "E-City Opens Spruced-Up Visitor Center," *Naples Daily News*, Apr. 21, 1994; Everglades National Park Statement for Interpretation, 1995.

Park staff formerly participated yearly in Everglades City’s biggest event: the Everglades Seafood Festival. The event began in 1974 to raise funds for a children’s park, drawing 500 people that first year. It has since grown into a three-day event held the first full weekend in February, with a carnival midway, local and out-of-town food vendors, and music, drawing from 50,000 to 70,000 visitors. From the festival’s beginning through 1986, the park staffed a booth to provide information on opportunities to see the real Everglades.⁹⁶⁰

Key Largo

Early Service plans for a visitor center and exhibits at Key Largo have never materialized. As described above in Chapter 6, the park opened a ranger station on fourteen acres of purchased land at Key Largo in 1954, and as of 1963, the park was planning a nature trail and basin for small boats there. For a brief period in the mid-1980s, the park offered rides on glass-bottomed boats and guided nature walks at Key Largo. At present, there is a wayside orientation panel near the ranger station. An interpretive outreach coordinator who works with the Monroe County schools also is stationed here. Since opening in 1960, John Pennekamp State Park has given visitors recreational and interpretive opportunities on Key Largo, lessening the urgency for the NPS to do so (figure 20–12, glass-bottomed boat at John Pennekamp State Park). The state park gives visitors a chance to experience the coral reefs that Ernest Coe always thought should be included in Everglades National Park. Visitors also can take advantage of the numerous private marinas, scuba-diving operations, and other tourist-oriented businesses throughout the keys.⁹⁶¹



Figure 20–12, glass-bottomed boat at John Pennekamp State Park).

⁹⁶⁰ “Everglades City Calm Once More,” *New York Times*, Dec. 26, 1974; “Hush Puppies Replace Drugs in Florida Town,” *Los Angeles Times*, Feb. 9, 1995; SAR, 1986.

⁹⁶¹ Asst. Dir. A. Clark Stratton to Sam Mase of *St. Petersburg Times*, Dec. 3, 1963, NARA Ph, RG 79, 79–68-A-636; “Everglades Park Offers Glass-Bottom Boat Tours,” *Miami Herald*, Dec. 24, 1986; Joe Browder, Environmental Policy Center, to Ernie Dickerman, TWS, Apr. 19, 1974, TWS papers; Melissa Memory, personal communication, June 26, 2013.

A Key Largo visitor center is not a park priority as of this writing; some believe it should not be contemplated because it would act to draw even more visitors to the crowded keys. The preferred alternative in the park's draft GMP calls for the following at Key Largo: a visitor information kiosk, a venue for a boater education/permitting function, a launch area for canoes and kayaks, and an interpretive trail through hammock vegetation. The NPS also hopes to pursue the concept of a multi-agency visitor orientation facility somewhere in the upper keys.⁹⁶²

Temporary Exhibits

Temporary exhibits are routinely mounted in all of the park's visitor centers, generally tied to current issues or anniversaries. For example, the main visitor center had an exhibit on Marjory Stoneman Douglas in the months after her death in 1998, and the 40th, 50th, and 60th anniversaries of the park's dedication were marked by temporary exhibits. Following passage of the Comprehensive Everglades Restoration Plan in December 2000, all of the park's visitor centers had exhibits on the need for and objectives of the restoration effort.⁹⁶³

Publications

As mentioned, the first NPS-produced park brochure became available in January 1951. The park brochure has traditionally been the primary printed piece distributed to visitors, and the Everglades brochure has gone through a number of iterations (figure 20–13, park brochures through the years). The versions from the 1950s and 1960s were in an 8–1/2-inch by 4-inch format, generally eight or sixteen pages, and printed in one color. The brochure always included a park map along with an introduction to the park's values and features. In this period, the park also sold a more detailed thirty-page guide in the same format, priced at fifteen cents. The cover of a 1960s free brochure reproduced an existing illustration by the Dutch artist M. C. Escher that the service received permission to use. The NPS minifolder format was in use starting in 1967. This used a sans serif typeface throughout, few illustrations, and the park name printed in white on a solid blue cover. In 1969, the park distributed some 215,000 copies of the minifolder. A park brochure in the NPS unigrid format, with full color illustrations, became available in 1978. The unigrid brochure has been revised several times to reflect the addition of the East Everglades and other changes.⁹⁶⁴

⁹⁶² Draft GMP, 70.

⁹⁶³ "Final Arrangements and Memorial Gathering Planned for Marjory Stoneman Douglas," NPS media release, May 15, 1998, EVER 58222; FY 2001 Servicewide Interpretive Report for Everglades National Park; "Everglades Turns 60!!!," NPS media release, Dec. 5, 2007, EVER 58222.

⁹⁶⁴ Acting Supt. Kennedy to Dir., Apr. 10, 1970, with enclosed 1969 Annual Report, Information and Interpretive Services, HFC; SAR, 1992 and 1998.

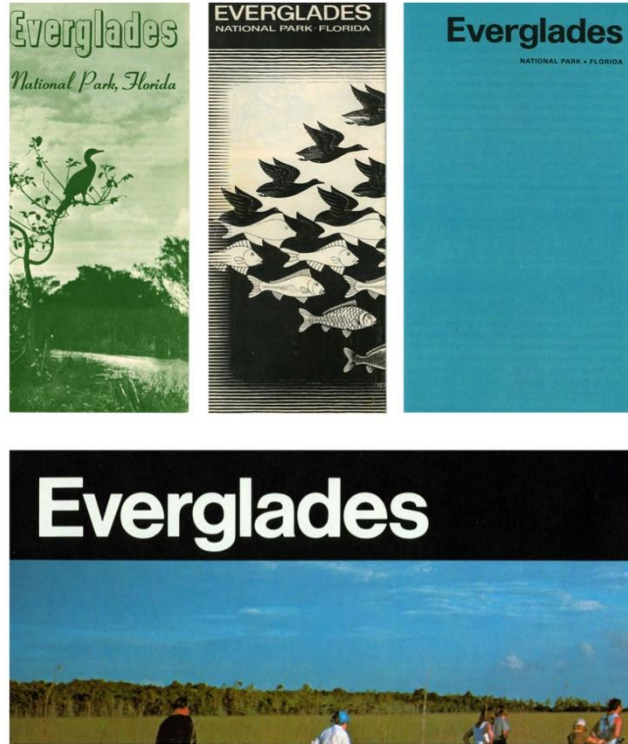


Figure 20–13, park brochures through the years

At the time that the Flamingo complex opened in December 1957 or shortly thereafter, the park began distributing a winter activity schedule along with the park brochure. This publication informed visitors of ranger talks available at Royal Palm and Flamingo and the schedule for concessionaire sightseeing boat tours. As summer interpretation expanded, a summer schedule was also produced. For many years, the park’s cooperating association, the Everglades Natural History Association, handled the preparation and printing of this schedule, from information supplied by park staff.⁹⁶⁵ In 1976, 125,000 schedules were distributed. In winter 1982/83, a tabloid-style newsprint publication, *Pa-Hay-Okee*, replaced the activity schedule, covering activities at Biscayne National Park as well as Everglades. A *Visitors Guide to South Florida’s National Parks* took the place of *Pa-Hay-Okee* in winter 1988/89. As the title suggests, the guide listed activities at Everglades, Biscayne, Fort Jefferson, and Big Cypress. As of 1998, 250,000 park guides were being distributed annually.⁹⁶⁶

In 1958, the ENHA established a joint publication program with the University of Miami Press to produce literature for park visitors.⁹⁶⁷ The first fruit of this arrangement was a ninety-six-page paperback that became a classic of Everglades literature. Park biologist

⁹⁶⁵ See Chapter 24 for the history of the cooperating association, which is now known as the Florida National Parks and Monuments Association.

⁹⁶⁶ Resume of Interpretive Operations, Jan. 30, 1976, EVER 22965; SAR, 1982, 1988, and 1998; *The Anhinga*, June 1983; *Visitors Guide to South Florida National Parks* 1, no. 1, Winter 1988/89, TWS papers.

⁹⁶⁷ Acting Supt. Fry to RDR1, June 16, 1958, NARA Ph, RG 79, 79–66-A-661.

Bill Robertson's *Everglades: The Park Story* was released in July 1959 (figure 20–14, second printing of *Everglades: The Park Story*). In graceful prose, Robertson described the landscape, natural history, and human occupation of the Everglades. The book was reprinted for the sixth time in 1973, when annual sales were about 6,500 copies, and a new and revised edition appeared in 1989. Robertson's gentle appreciation for the Everglades shines forth in his closing sentence:

In ways not simple to explain, American lives are richer because there is still room in the land for crocodiles to build their sandpile nests on the lonely Florida Bay beaches, and for deer to browse in their grace along the willow heads with perhaps a panther to stalk them.⁹⁶⁸

In the wake of Robertson's book, the association and the university press published several other books and pamphlets written by park staff or cooperators. In recent decades, trade publishers have produced numerous books on the Everglades and the park, making it less necessary for park staff to produce them. Some notable titles produced through the cooperating association include:

Frank C. Craighead, *Orchids and Other Airplants of Everglades National Park*, 1963
Charlton Tebeau, *They Lived in the Park*, 1963 (reprinted in 1968 with the title *Man in the Everglades*)
Alex Hawkes, *Guide to Plants of Everglades National Park*, 1965
Gale Koschmann, *Turtle-lore from Everglades National Park and South Florida*, 1965
John Ogden, *Checklist of Birds: Everglades National Park*, 1969
George Stevenson, *Trees of Everglades National Park and the Florida Keys*, 1969
William G Truesdell, *A Guide to the Wilderness Waterway in Everglades National Park*, 1969
John O'Reilly, *Boater's Guide to the Upper Florida Keys*, 1970
Jean Craighead George, *Everglades Wildguide*, 1972
Robinson, *Motorist's Guide to Everglades National Park*, 1977
Connie Toops, *The Alligator: Monarch of the Everglades*, 1979

⁹⁶⁸ William B. Robertson Jr., *Everglades: The Park Story* (Coral Gables, FL: University of Miami Press, 1959), 91; SAR, 1973 and 1990.

Park staff has produced hundreds of other printed items for distribution to visitors and school groups. Single-sheet site bulletins are used for trail and boating maps and to provide basic information on plant and animal life, water issues, invasive species, threats to the park, closures of park areas, and the like.⁹⁶⁹

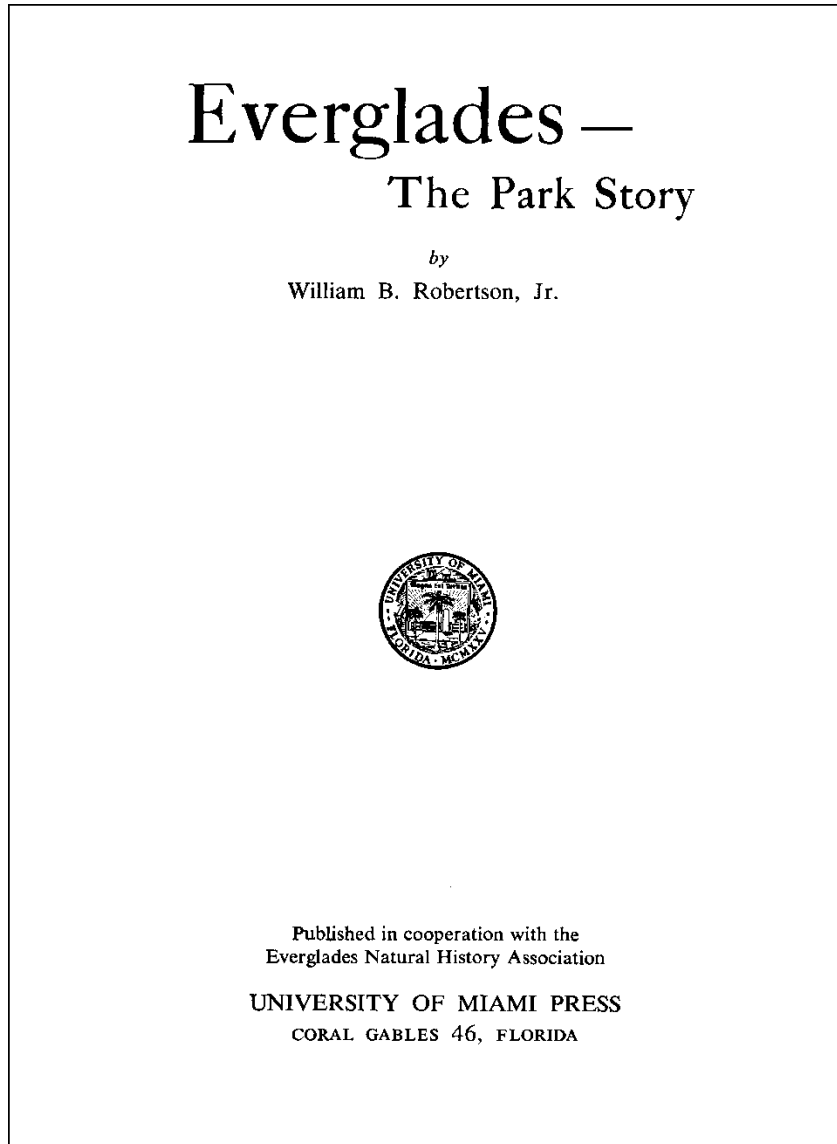


Figure 20–14, second printing of *Everglades: The Park Story*

⁹⁶⁹ Everglades National Park Statement for Interpretation, 1995, EVER 302868.

Junior Ranger Program

The park lacked a junior ranger program until 2000. Interpretive Ranger Allyson Gantt took the lead in developing the program, which included Big Cypress and Biscayne as well as Everglades. Gantt and Rangers Joele Doty and Lisa Andrews collaborated to produce a twenty-page activity book, first printed in 2004 (figure 20–15, Junior Ranger booklet). The parks chose to focus on South Florida habitats. The aim was to encourage children to undertake place-based activities with their parents that would engage them with those habitats. One of the key requirements for earning a badge was doing at least one such activity. The book includes pages for children to record wildlife and plant sightings, as well as puzzles and word searches, all based on observation and interaction with habitats. After successfully completing the activities to a ranger’s satisfaction and signing a conservation pledge, participants earn a badge from each park; after garnering the three badges, they receive a patch. In 2007, the park produced Spanish and Haitian Creole versions of the Junior Ranger activity book.⁹⁷⁰



Figure 20–15, Junior Ranger booklet

⁹⁷⁰ Allyson Gantt, interview by author, June 1, 2012; SAR, 2000 and 2007; ENP Junior Ranger Program, <http://www.nps.gov/ever/forkids/upload/Junior%20Ranger%20Book%20Minute.pdf>.

Offsite Interpretation and Outreach

Park managers were aware from the beginning that large numbers of people in the Miami metropolitan area were only dimly aware that they had a national park on their doorstep. They began looking for ways to reach these people and encourage them to visit. Having park staff speak to naturalist groups, garden clubs, civic organizations, and the like has long been NPS policy, and Everglades has consistently done this. Park Naturalist Dilley began writing a weekly column, “This Week in Everglades National Park” for the *Homestead Leader-Enterprise* in summer 1952. In the winter of 1957/58, radio station WSDB in Homestead began a twice-monthly half-hour program on the park, using park staff. Through the years, park staff have made themselves available for thousands of media interviews and appearances on radio and television.⁹⁷¹

In 1993, the park began to produce and make available a series of twenty-six-minute videos known as *Waterways*. Produced in partnership with NOAA’s Florida Keys National Marine Sanctuary and the U.S. Environmental Protection Agency (EPA), *Waterways* episodes introduce viewers to the waters and lands of South Florida. The bulk of the funding comes from the NPS and the EPA. The programs aim to foster an understanding of science and restoration in the region’s ecosystems, inspire curiosity and passion for their resources, and encourage conservation action. *Waterways* episodes are shown on more than thirty public and governmental stations in Florida and have also been shown on a network maintained by the New York State University System. More than 267 episodes have been produced as of this writing. Some of the topics covered are scientific research efforts, conservation-minded recreational practices, aspects of the Comprehensive Everglades Restoration Plan, and the threats posed by nonnative species. Although natural resources are the primary focus of *Waterways*, some episodes have focused on cultural resource projects, such as the conservation work performed on cannons at Fort Jefferson in Dry Tortugas National Park. In 2008, the park began producing informational and interpretive videos for podcasting in an effort to reach new, especially younger, audiences. The informational podcasts help visitors to plan a visit, and the interpretive podcasts feature rangers discussing natural history topics. Both varieties prominently feature video of wildlife. On Earth Day 2008, the park hosted an electronic field trip, entitled “Turn Over a New Leaf.” The program focused on the conflict between invasive and native species and an estimated 35,000 students participated.⁹⁷²

⁹⁷¹ SMR, Aug. 1952, Jan. 1958.

⁹⁷² Alan Scott, interview by author, Oct. 6, 2011, and personal communication, Sept. 17, 2013; Nancy J. Russell, personal communication, June 26, 2013; *Waterways* Episode Production, Solicitation No. Q5283100054; “Waterways Back on the Air and Online!,” NPS media release, Jan. 30, 2012; “Armed with Podcasts, Park Eyes Younger Generation,” *Miami Herald*, Sept. 27, 2009; SAR, 2007; FY 2008 Servicewide Interpretive Report for Everglades National Park.

In summer 2003, the Florida Department of Environmental Protection launched an educational radio station called the Everglades Radio Network. The network's low-powered signal reaches from the Naples vicinity to at least the midpoint of the east-west stretch of Interstate 75 (Alligator Alley). Prerecorded programs on the wildlife and plants of the Everglades, threats to the environment, and the Comprehensive Everglades Restoration Plan repeat twenty-four hours a day. The network also broadcasts weather reports and can be used to provide emergency information during hurricanes and tropical storms. Staff from Everglades National Park and Big Cypress National Preserve (the latter traversed by I-75) assisted with the development of themes and topics for the broadcasts.⁹⁷³

Social Media

As more and more people rely on social media to plan trips and maintain contact with friends, the park has moved into this arena. While in decades past, park visitors might write in advance for a brochure, today visitors are as likely to visit a social media site using a cell phone or tablet for trip planning. The park has a presence on Facebook, Twitter, and Yelp. The park's Facebook page provides information on visiting the park, links to media pieces on the park, and announcements, such as invitations for the public to volunteer at the park. Facebook users may write comments and post photographs of their visits to the park. At present, the park has more than 12,000 likes on Facebook and 6,000 Twitter followers. Yelp collects user reviews and comments about businesses and destinations; as of this writing, the park is beginning to get more Yelp reviews.⁹⁷⁴

Reaching Non-English Speakers and Disadvantaged Communities

Once Western European countries were launched on their remarkable economic recovery from World War II, their citizens began to visit American national parks in significant numbers. Many have found their way to the Everglades. Following the 1959 Cuban Revolution, Spanish speakers from that island began arriving in South Florida, and most ended up becoming American citizens. Immigration from Haiti and other parts of Latin America to the area has been a significant trend in recent decades. All of these developments have motivated the park to expand its interpretive activities to languages other than English. The draft of a site bulletin in Spanish from early 1963 is in the park archives, but it is uncertain whether it was actually printed. The earliest printed foreign language publication that has been located is a 1973 self-guiding brochure in French, *Au long de la route jusqu'à Flamingo*. A park staffer recommended the preparation of Spanish- and German-language versions; this is evidence that perhaps the park had

⁹⁷³ ““Glades Radio to Alert, Inform Drivers; Signal Targets Alligator Alley,” *South Florida Sun-Sentinel*, Apr. 14, 2003; Alan Scott, personal communication, Sept. 17, 2013.

⁹⁷⁴ Alan Scott, personal communication, Sept. 17, 2013.

nothing printed in Spanish at that time. In 1983, the park arranged a brief course in Spanish for park interpreters and gave them a list of common Spanish phrases. A survey conducted in winter 1989 indicated that 18 percent of park visitors were foreigners. At that time, the park had brochures available in Spanish, German, French, Italian, Dutch, and Japanese. As of this writing, Chinese, Portuguese, and Russian versions have been added. In 2002, a Spanish version of the *Visitors Guide to South Florida's National Parks* became available. Park Chief of Interpretation Alan Scott has noted that Everglades and other national parks seem to be highlighted in many European guidebooks. Efforts to engage and accommodate foreign visitors are likely to become increasingly important in the future.⁹⁷⁵

As the American population has become more diverse, the NPS has become increasingly aware that its parks historically have drawn the bulk of their visitors from the ranks of the white middle class. Service leaders realize that the future of the parks depends on attracting visitors from the African American, Hispanic American, and Asian American communities. It is particularly important to interest inner-city residents in the national parks. Urban dwellers frequently have little exposure to natural areas. Often, anxieties about the perceived dangers of national parks deter visits from urban residents. Everglades National Park has taken various steps to try to broaden its appeal and visitor base. These include encouraging inner-city schools to participate in the park's environmental education program and partnering with the National Parks Conservation Association in the national March for Parks program. Everglades has participated in this program since 2002. In 2009, for example, the program provided free bus transportation to the park from the Little Havana and Overtown neighborhoods of Miami and Florida City. Park staff provided a free tour of the HM-69 missile site and organized games and a raffle.⁹⁷⁶

Use of Interpretive Program to Raise Public Awareness of Environmental Issues

As the environmental degradation in the Everglades became increasingly apparent, superintendents used the interpretive program as an educational tool. Robert Amberger, deputy superintendent under Michael Finley in the late 1980s, has described a well-thought-out strategy that the two of them employed to use interpretation to inform visitors about threats to South Florida ecosystems and citizens' responsibilities to address those threats. As described in Chapter 9, Finley at the same time was helping to craft a water-quality lawsuit against the state of Florida and pressuring the South Florida Water Management District to change water delivery schedules. He saw educating the public

⁹⁷⁵ Jim Sanders, Mgmt. Asst., to District Interpreter, Pine Island, July 18, 1978, EVER 22965; SAR, 1983; Everglades National Park Statement for Interpretation, 1995, 29, EVER 22965; FY 2002 Servicewide Interpretive Report for Everglades National Park; Alan Scott, interview by author, Oct. 6, 2011.

⁹⁷⁶ "Free Tour of Everglades Offered to Urban Miami-Dade Dwellers," *Miami Herald*, Mar. 26, 2009; Allyson Gantt, interview by author, June 1, 2012.

through interpretation as just one piece in an overall campaign to improve the condition of Everglades National Park. As one example, the 1988 Superintendent's Annual Report noted "Shark Valley tram tour interpretation focuses on critical issues relating to water quantity, quality, timing, and distribution, affording first-hand observation of the habitats affected by water conflicts." Waysides on critical issues also were produced.⁹⁷⁷

Increasing Emphasis on the Human Presence in the Everglades

Over the years, the park's interpretive program has given more weight to the human presence in the Everglades. In the park's first two decades, interpretation of both the Indian and white presence in the Everglades was limited. It was park policy to remove pioneer structures, so the history of white settlement could be interpreted only through photographs and text. In the 1950s, some thought was given to slicing open a prehistoric Native American mound as an exhibit. This idea did not seem likely to further protection of the resource and it was dropped. During the 1976 bicentennial year, the park increased its interpretation of "the role of man and his activities in South Florida." As described above, the exhibits in the Ernest F. Coe Visitor Center deal only with the Seminole and Miccosukee, not the white, presence in the Everglades. In 2011, the park began an annual event known as Vintage Days, featuring presentations by local historians, special tours, and interactions with costumed interpreters. Park staff, including the superintendent at times, dress up as historical characters for the event. Characters have included Indians, gladesmen, botanists, park wardens, plume hunters, and conservationists.⁹⁷⁸

In 2002, with the 40th anniversary of the Cuban Missile Crisis, the park invited former servicemen who were stationed at Nike Missile Base HM-69 to return to the site with their families. This led to opening the base to visitor tours in January 2009, a development that drew international attention. Tours have continued and have proven very popular with visitors. The 50th anniversary of the missile crisis in November 2012 brought a reunion attended by nearly 200 veterans of the four South Florida Nike bases. A highlight of the reunion was a tour of the HM-69 base conducted by park rangers. The park now has on display a refurbished (and disarmed) Nike Hercules missile found in

⁹⁷⁷ Robert Arnberger, interview by author, Aug. 2, 2012; Michael Finley, interview by author, Nov. 19, 2012; SAR, 1988, 1991.

⁹⁷⁸ Resume of Interpretive Operations, Jan. 30, 1976, EVER 22965; FY 2009 Servicewide Interpretive Report for Everglades National Park; Draft GMP, 67; "Everglades Vintage Day," ENP website, <http://www.nps.gov/ever/planyourvisit/everglades-vintage-day.htm>; "Vintage Everglades Day 2012," ENP website, <http://www.nps.gov/ever/parknews/vintageevergladesdayeverpr020912.htm>; personal communication, Nancy Russell, Aug. 11, 2014.

Alabama. As funds become available, the park intends to rehabilitate the missile site and expand and enhance its interpretation for the public.⁹⁷⁹

Artists in Residence in the Everglades Program

The park's Artists in Residence in the Everglades (AIRIE) program grew directly out of the Comprehensive Everglades Restoration Plan (CERP). Artist Donna Marxer, a Miami native who had long lived in New York, read about the CERP and decided that it needed an artistic component. It took her a while to get the attention of the NPS, but when a congressional inquiry was forwarded to the park superintendent in 2001, the park responded favorably. Park Interpretive Ranger Alan Scott worked with Marxer to get the effort going. Most such programs in national parks select one artist per year, but Everglades wanted to involve a greater number. It therefore limits residencies to a maximum of one month and aims to have five or more artists per year. The program is open to writers, photographers, and all kinds of visual artists. Applicants are reviewed by a panel of local artists and park staff, with the park making the final selections. The park provides lodging in the park. In most cases, each artist donates one original work to the park and gives public presentations on his/her work.⁹⁸⁰

The AIRIE program has proven tremendously successful both for the artists and the park. Artists get the chance to work in a unique environment away from everyday distractions, often finding exciting new directions in their work. Anne McCrary Sullivan, the second writer in residence in 2003, had been involved in other similar programs. She anticipated that she would spend most of her day in a cottage in the park and take an occasional walk. Instead:

By the third day I was a fanatic. Every morning I would pack a backpack with lunch and water and a journal, bird books and plant books, and a tape recorder. I'd go out and follow rangers around with the tape recorder, observe things, and look up things. Then I would go back at night and type up what I had written and transcribe what I had taped. The poems would emerge from that process. I've been writing about the Everglades ever since.

⁹⁷⁹ "Everglades Visitors Tour Cold War Missile Site," *USA Today*, Mar. 3, 2009; "Historic Nike Missile Unveiled in the Everglades," *Florida Antiquity* 10, no. 1 (Winter 2013): 1–3, http://www.mnemotrix.com/ahci_web/nl_jan13.pdf.

⁹⁸⁰ Alan Scott, interview by author, Oct. 6, 2011; "Everglades Program Aids Artists, Parks," *Miami Herald*, Apr. 4, 2002. The park has a history of welcoming artists; in 1972, artists working in the park on their own were given smocks with the park logo, SAR, 1972.

Following their residencies, artists become ambassadors for the park, reaching constituencies like fellow artists and art collectors, who might not otherwise know much about the Everglades. An interaction with someone who has lived in the park can work wonders in dispelling common misconceptions about the Everglades. In 2009, a nonprofit organization, AIRIE, Inc., was created to manage the program in partnership with the park and raise funds to support it. Donna Marxer relinquished her position as chair of the board in 2011, and was replaced by Anne McCrary Sullivan. A local artist, Christy Gast, became president. Gast wrote a proposal that resulted in a three-year, \$30,000 matching grant from the John S. and James L. Knight Foundation. With this and other funding sources, AIRIE, Inc., hopes to mount traveling exhibitions of resident artists' work and produce publications. The group has found more local board members and expanded its partnerships with arts organizations in South Florida. As of this writing, some 100 artists have participated in AIRIE. In 2012, internationally acclaimed American artist Mark Dion was an AIRIE. Dion sees the artist's role as one of "challenging the dominant culture," and his fantastical curiosity cabinets examine and challenge the way in which knowledge of nature is "constructed."⁹⁸¹ (Figure 20–16, AIRIE artist Lisa Elmaleh photograph entitled *Slash Pines*.)



Figure 20–16, AIRIE artist Lisa Elmaleh photograph entitled *Slash Pines*

⁹⁸¹ Anne Sullivan, personal communication, July 13, 1012; Alan Scott, interview by author, Oct. 6, 2011; AIRIE, Inc., website, <http://airie.org/>; Public Broadcasting System website, <http://www.pbs.org/art21/artists/mark-dion>; Melissa Memory, personal communication, June 26, 2013.

Environmental Education

In the 1960s, school groups regularly visited the park, going mostly to the Anhinga Trail and the Mahogany Hammock Trail where rangers presented programs. In 1963, the park noted that it welcomed 300 students from an all-black Miami public school, at a time when public education was strictly segregated by race throughout Florida. This traditional sort of school field trip assumed a different character in the 1970s. As described in Chapter 9, public concern over damage to America's natural environment had grown substantially in the 1960s. This concern led to the passage of the National Environmental Policy Act and the creation of the federal Environmental Protection Agency, both in 1970. The NPS, as custodian of the nation's premier natural areas, saw environmental education as a fitting addition to its mission in this period. NPS Director George Hartzog supported the idea, and the service announced the National Environmental Education Development (NEED) program in 1968. NEED was primarily designed to bring schoolchildren into parks for direct experiences of the natural world, leading them to a personal sense of stewardship for the resources. Young people were the main audience, but the program also targeted other visitors.⁹⁸²

Environmental education began in Everglades National Park in spring 1971 in partnership with the Dade County schools. A six-week pilot program brought urban, grade school students to Shark Valley for a "Day-in-the-Glades." The outings were largely unstructured, with students being bused to the observation tower, interacting with rangers, going on a scavenger hunt, and viewing wildlife (figure 20–17, environmental education group, 1970s). The highlight of the day was fishing with a cane pole from a pier in a borrow-pit lake. The program was well received by students and teachers, and park interpretive staff began planning to expand the program and make it truly educational. The fishing component was difficult to properly manage and of limited educational value; it was dropped in 1973. General visitation also was high at Shark Valley and sometimes conflicted with school visits, prompting interpreters to seek other areas in the park. During the 1972–1973 academic year, the park designated National Environmental Study Areas (NESA's) on Long Pine Key and Sandfly Island and began using them for day programs. For the Sandfly Island program, children were taken by boat from Everglades City.⁹⁸³

Under Chief of Interpretation George Robinson and his assistant Bruce McHenry, the park's environmental education program rapidly gained momentum. Soon, schools in

⁹⁸² SMR, Nov. 1963; ENP Supt. to Harriet Ehrhard, Dade County Public Schools, May 13, 1971, "History of NPS Education Program" (N.p.: NPS, [1991?], EVER-00886; Ronald F. Lee, *Family Tree of the National Park System* (Washington, DC: NPS, 1972), http://www.cr.nps.gov/history/online_books/lee3/lee6.htm.

⁹⁸³ Sandy Dayhoff, interview by author, Jan. 24, 2012.

Broward, Collier, Monroe, and Lee Counties were participating. In 1973, the park started overnight camping programs at the Flamingo and Long Pine Key campgrounds. Fifth and sixth graders were participants in this program. In 1974, the park decided to require teacher workshops for all the environmental education programs and also produced curriculum-based guidebooks. The purpose of the workshops was to give teachers a clear understanding of the roles of all participants, provide them with advance knowledge of the program site, and distribute information and materials. Teacher workshops have remained a key part of the program. As of January 1977, interpretive staff working on environmental education no longer had general interpretive responsibilities and could devote all of their energies to the educational program. From that time forward, the park has had an education coordinator, as of this writing called an education and outreach coordinator. Since 1984, the park has produced *School Visits to South Florida Parks*, a comprehensive catalog of workshops and programs at Everglades, Biscayne and Big Cypress.⁹⁸⁴



Figure 20–17, environmental education group, 1970s

The environmental education program took a big step forward with the 1977 opening of the Loop Road Environmental Education Center. An old church camp occupied five acres along the Loop Road within the recently established Big Cypress National Preserve, which at the time was being administered by Everglades National Park. Everglades Ranger Sandy Dayhoff and her husband, Big Cypress Ranger Fred Dayhoff, who lived next to the camp, got the idea of converting it to an environmental education center. The site was on the edge of a hardwood hammock and close to a number of other

⁹⁸⁴ Chronology of Environmental Education, 2011, EVER-00886; “School Visits to South Florida National Parks, 1998–99,” FNPMA records.

environments—sawgrass prairie, pineland, and cypress swamp. It also had several usable, if dilapidated, buildings, a pond, utility connections, and was easily accessible from Miami, an hour to the east, and Naples, an hour and one-half to the west. Sandy Dayhoff wrote up a proposal, and Superintendent John Good said, “Okay, Dayhoff, go on and try it.” As Sandy remembers it:

We proceeded to clear the land ourselves. My husband and I did it. My neighbor came down with his bulldozer, and we cleared it off and set up to do a camping program. The old building that was our office was full of termites and had an asbestos ceiling.⁹⁸⁵

The Dayhoffs, other park staff, and volunteers improved existing trails and laid out new ones, naming them Tree Snail, Arch, Bladderwort, and Still Trails.⁹⁸⁶ Because the ground-level tents used at first easily flooded in a heavy rain, reservists from the 915th Civil Engineering Squadron at Homestead Air Force Base constructed permanent tent platforms. On more than one stormy night, campers ended up huddled in the old house on the property. A children’s visitor center operated at the Loop Road center beginning in 1988. The center was staffed mostly by volunteers and had to be closed in 1991. In 1997, the park erected a small building containing an office and teacher resource room at Loop Road. From January 1978 until her retirement in 2006, Sandy Dayhoff kept the “The Old Log—A Journal of Tree Snail Hammock.” Over the years, interpreters, volunteers, and teachers added entries to the log. In 1995, Kristen Kram of Miami Springs Elementary School, contributed this poem:

In the morning the sun will rise,
Thinking of all the nature surprise.
I hear the birds in the sky,
As they are flying by.
I see the trees standing tall,
Without thinking of the mall.⁹⁸⁷

⁹⁸⁵ Sandy Dayhoff, interview by author, Jan. 24, 2012; Sandy L. Dayhoff to Supt., Aug. 24, 1976; Sandy L. Dayhoff, Big Cypress Environmental Education Program, May 1977, EVER-00886.

⁹⁸⁶ Floating bladderwort, *Utricularia inflata*, grows in South Florida ponds, swamps, and canals. The remains of moonshine still on the site inspired the naming of that trail.

⁹⁸⁷ SAR, 1988; “Big Cypress National Preserve/Everglades National Park to Dedicate Renovated Environmental Education Facility at Loop Road,” NPS media release; March 17, 1998, “The Old Log [journal of activities at Loop Road facility],” EVER-00886.

Once the Loop Road center was established, the interpretive staff looked to create a site for overnight experiences in the eastern part of the park. They got permission to use the Boy Scout camp on Research Road for a couple of years, and then in 1981 decided to create an environmental education center at Hidden Lake on the old Ingraham Highway. At first, Hidden Lake had permanent tent platforms, a thatched roof chickee-style shelter, and composting toilets. In 2004, the park built a 556-square-foot building at Hidden Lake, which houses the well head supplying water and serves as a shelter during storms.⁹⁸⁸

Throughout its history, the environmental education program has been innovative. Many programs were tried and abandoned after a few years while others have remained in place (figure 20–18, Environmental Education activities, winter 1972/73). A family camping program was in place for a single season at Loop Road in 1980. For high school students, the park ran a Students Toward Environmental Participation (STEP) camping program from 1975 to 1984 and day program at Royal Palm from 1988 to 1992. Because the park has limited land holdings in the Florida Keys, environmental education in the keys has largely taken the form of in-class programs, mainly in the Key West and Key Largo schools. Everglades staff also ran programs at Fort Jefferson. Since 1977, the park has run educational programs for children in the Miccosukee tribal school, both within the park and in classrooms. The only break came in 1991 through 1993 when staff changes and staff shortages in the Interpretive Division made it impossible to conduct the program. The park also worked to expand the environmental education program to students who could not visit the Everglades. Staff produced their first traveling exhibit in 1987. In 1996, they prepared an activity kit that was sent to every 4th grade in the state of Florida—more than 7,000 kits. In 2005, the park produced *Don't Let It Loose!*, an eighty-page curriculum guide for grades five through eight on the dangers of releasing exotic species into the environment.⁹⁸⁹

⁹⁸⁸ Michael Jester, personal communication, Oct. 31, 2013.

⁹⁸⁹ Chronology of Environmental Education, Everglades National Park, 2011, “Everglades National Park Ecology Week, 5th Grade,” NPS media release, 1982, EVER-00886; ENP, <http://www.nps.gov/ever/forteachers/upload/Don't%20Let%20it%20Loose%20Curriculum%20Guide%202008.pdf>. Sandy Dayhoff tells of having to evade orders not to work during the government shutdown of 1996–1997 in order to get the kits out on schedule, helping the UPS driver load his truck. Sandy Dayhoff, interview by author, Jan. 24, 2012.



Figure 20–18, Environmental Education activities, winter 1972/73

Environmental education has not always had support from political appointees in Washington. During the Reagan administration, NPS Director William Penn Mott attempted to get the agency out of the environmental education business. One way the park coped was by temporarily removing the words “environmental education” from park signs. As federal funding for educational programs was cut, program managers increasingly sought foundation and other sources of money. Over the years, the National Park Foundation, the Pew Charitable Trusts, the South Florida Water Management District, the U.S. Army Corps of Engineers, the Curtis and Edith Munson Foundation, and the South Florida National Parks Trust, among others, have supported the park’s program. In 2008, the Toyota Foundation gave the park a \$1 million, three-year grant along with five vehicles, including a Highlander Hybrid and a Prius, all to be used for the environmental education program. When the Toyota grant ran out, the park sought other donors. As of this writing, NPS funding covers only about one-half of the \$300,000 annual budget for the environmental education program.⁹⁹⁰

⁹⁹⁰ “Toyota Announces Gift of \$1 Million, 5 Vehicles,” *Miami Herald*, May 7, 2008; Allyson Gantt, interview by author, June 1, 2012.

The park has always seen the environmental education program as one of its best methods for building a constituency for conservation and ecosystem restoration. As the park began pressing the South Florida Water Management District for altered water delivery schedules in the 1980s, ecosystem restoration was more heavily stressed with the schoolchildren. In 2004, the park partnered with the district and the Corps to produce *The Journey of Wayne Drop to the Everglades*, a sixteen-page, full-color booklet. The booklet followed the journey of a very personable drop of water from a cloud through the Kissimmee-Okeechobee-Everglades watershed to Florida Bay. The emphasis on conservation and citizen responsibility in the environmental education program seems to have borne fruit. Sandy Dayhoff and others speak of running into adults all over South Florida who say they have become conservation-minded voters because of a visit to the Everglades as grade schoolers.⁹⁹¹

The Everglades interpretive staff ended up traveling extensively to other parks to train others in educational techniques. The park's environmental education program also attracted international attention, with educators from as far away as Burma coming to the park to learn about it. In January 1990, President George H. W. Bush, Secretary of the Interior Manuel Luhan, and Governor Bob Martinez participated in a 6th-grade environmental education program in the park.⁹⁹²

The Everglades National Park environmental education program was not the first in the National Park System, but it is the oldest consistently maintained program. Since hitting its stride in the mid-1970s, the program has never served fewer than 10,000 students annually and has reached as many as 35,000. As one of the park's catalogs for teachers puts it:

The National Park Service's school programs have as goals instilling an appreciation for the fragile South Florida ecosystem and provoking a concern for the ecosystem's problems. As today's students become tomorrow's resource users and voters, it is hoped that they will be motivated to help solve these problems.⁹⁹³

Most observers would conclude that the Everglades National Park's environmental education program has had success in reaching these goals.

⁹⁹¹ Sandy Dayhoff, interview by author, Jan. 24, 2012; *The Journey of Wayne Drop to the Everglades*, Everglades Plan, http://www.evergladesplan.org/education/educ_docs/wayne_drop/waynedrop_eng.pdf.

⁹⁹² SAR, 1988; "A Presidential Visit to Save a Park," *Visitors Guide to South Florida's National Parks*, Summer 1990.

⁹⁹³ "School Visits to South Florida National Parks, 1986-87," FNPMA records.



**Wilderness on the Edge:
A History of Everglades National Park**

*Chapter 21:
Resource and Visitor Protection*

Chapter 21: Resource and Visitor Protection

What is now known as the park's Division of Resource and Visitor Protection has evolved from a chief ranger supervising a staff of four or five rangers, ca. 1949 to a division with five major areas of responsibility and a year-round staff of about seventy-five people, supplemented by up to twenty-five seasonals.⁹⁹⁴ In the park's early years, the division faced the challenge of achieving basic resource protection goals in an area where many residents viewed the taking of fish, game, and plants as necessary and customary activities. Beyond the tasks common in all parks—such as protecting visitors; patrolling roads and waterways; providing emergency medical assistance, search and rescue, and resource management—rangers at Everglades have encountered special challenges arising out of the park's location at the tip of the Florida peninsula. These have included dealing with major agricultural and military inholdings and coping with the smuggling of drugs and refugees from other countries. As of this writing, the division's responsibilities are: law enforcement, special park uses, the fee program, and dispatch.⁹⁹⁵

Operations in the Early Years

On January 29, 1948, Earl Semingsen entered on duty as the park's first chief ranger, remaining in that position until August 1951. Among the early cadre of rangers were Paul Barnes, James B. Earle, Edward Stephanic, Ralph Maxwell, Erwin Winte (who retired from Everglades in 1974), and Barney Parker. Parker had been an Audubon warden and a warden in the Everglades National Wildlife Refuge. Ralph Miele, who started in the winter of 1951/52 as a GS-2 fire control aid, retired from the park in 1980, having held a number of positions, including ranger-pilot. In the winter of 1949/50, the park brought on four seasonal rangers. By summer 1950, the park had a chief ranger and six permanent rangers.⁹⁹⁶ Rangers in this period were wide-ranging generalists, handling law enforcement, resource management, visitor assistance, and anything else that arose. The service had not yet distinguished interpretive rangers from law enforcement rangers, although some positions were classified as ranger-naturalists, which roughly paralleled the later interpretive ranger position.

At the time of his selection as park superintendent, Dan Beard envisioned three administrative districts for the park: Everglades land area, with headquarters at Royal Palm Lodge; Cape Sable/West Coast, with headquarters in existing buildings at Coot Bay; and Florida Bay, with headquarters at Tavernier on Key Largo. Beard hoped

⁹⁹⁴ Previous names have included Ranger Services Division and Division of Law Enforcement and Visitor Protection.

⁹⁹⁵ In 2014, fire and aviation was moved from Resource and Visitor Protection to the SFNRC.

⁹⁹⁶ SMR, Oct. and Nov. 1947, Jan. and Sept. 1948, Apr., Aug., and Nov. 1949, Apr. 1951; RDR1 to Dir., Aug. 16, 1950, NARA II, RG 79, NPS Dir. Recs., Drury, box 7; Miele interview.

eventually to have a district ranger in each location, but he acknowledged that initially the chief ranger would also serve as district ranger for the Everglades land area district (now known as the Pine Island District). The park rapidly established the Coot Bay and Royal Palm ranger stations but did not find a headquarters location for the Florida Bay District until 1954, when it was established between mile markers 98 and 99 on Key Largo, several miles north of Tavernier. In January 1952, the park established a fourth district, the Tamiami District, locating its headquarters on the former Szady property, a service station and restaurant at the forty-mile-bend of the trail. The park also set up a patrol cabin on Lostmans River, at first in a houseboat borrowed from the U.S. Department of Agriculture. By January 1950, the park had built its own small structure there. After acquiring additional acreage in the northwest extension, the park in 1959 established a fifth district, the Gulf Coast District, with headquarters at Everglades City.⁹⁹⁷

Since 1959, there have been only minor adjustments to this arrangement of five administrative districts. Notably, the Tamiami District has at times been a subdistrict of the Pine Island District. In the early years after the East Everglades addition, there was an East Everglades District, but in 2004, the East Everglades District was combined with the Tamiami District to form the Northeast District.⁹⁹⁸

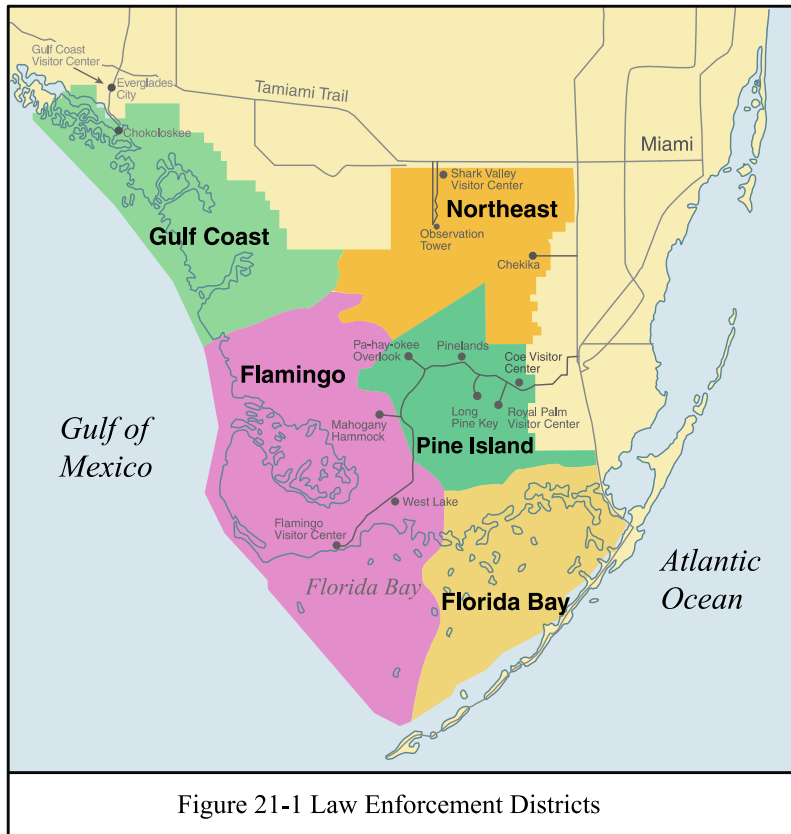
As of this writing, the park is divided into the following five districts (figure 21–1, law enforcement districts):

- Pine Island District includes the headquarters area, Long Pine Key, and the main road up to Mahogany Hammock.
- Flamingo District includes the largest district; it extends southwest from Mahogany Hammock, including the Flamingo developed area and most of the backcountry that is accessed by water, and runs up the Gulf Coast to the south bank of Wood River.
- Gulf Coast District covers the west coast from Wood River north. This district is based at Everglades City and is a water-based district.
- Northeast District includes the Tamiami Trail, the Shark Valley developed area, and the East Everglades.
- Florida Bay District, based out of Key Largo, is almost wholly water-based.⁹⁹⁹

⁹⁹⁷ Daniel B. Beard, A Proposal for the Protection and Administration of the Everglades National Park, Mar. 15, 1947, NARA Ph, RG 79, 79–58-A-360; SMR, Sept. 1949, Jan. 1950, Jan. 1952; “Resource Management & Visitor Protection & Safety, FY80,” June 1979, EVER-01741.

⁹⁹⁸ “Resource Management & Visitor Protection & Safety, FY80,” June 1979, EVER-01741; Bonnie Foist, interview by author, Oct. 10, 2011.

⁹⁹⁹ Bonnie Foist, interview by author, Oct. 10, 2011; Tom Iandimarino, personal communication, June 26, 2013.



As of December 1, 1951, the United States assumed exclusive jurisdiction from the state of Florida over the lands, submerged lands, and waters included in Everglades National Park. This meant that park rangers became the law enforcement officers in the park, having responsibility for enforcing U.S. laws and departmental regulations. Local and county law enforcement officers would be called in only when they possessed special expertise that rangers lacked. Early in 1952, Thomas Hodson of Homestead was appointed U.S. commissioner for the park. Most violations in the park were brought before Hodson and his successors; more serious cases were handled by the U.S. attorney's office in Miami. In March 1952, Hodson handled the first case from the park, fining two men for using illegal fishing nets.¹⁰⁰⁰

In the 1980s, it became NPS policy to move to concurrent jurisdiction, where federal and state officers share jurisdiction within a park's boundary. After lengthy discussions with the state, an agreement was reached, and legislation was signed in Tallahassee on June 5, 1986, authorizing concurrent jurisdiction in Everglades National Park and the other NPS units in the state. Governor Bob Graham acknowledged the state's acceptance of

¹⁰⁰⁰ Supt. Beard to Glenn C. Mincer, States Attorney, Miami, Feb. 11, 1952, EVER-01741; SMR, Feb., Mar. 1952.

concurrent jurisdiction by letter on October 27, 1986. When new lands come into NPS ownership, the park exercises proprietary jurisdiction until its agreement with the state can be amended to cover the acquired property.¹⁰⁰¹

In the early years, Everglades rangers concentrated on asserting NPS authority over the lands and waters of the new park and protecting park resources (figure 21–2, rangers and other staff, winter 1951/52). Superintendent Beard noted that previously, protection had been given only to rookeries and not very consistently. He described his job as “bringing a large area of difficult terrain under complete protection.” Prior to 1947, the taking of alligators, deer, fur-bearing animals, frogs, sea turtles, tree snails, and plants had been almost wholly uncontrolled. NPS Regional Director Thomas Allen observed that the state of Florida had fish and game regulations on the books “which none of their men were brave enough to even attempt to enforce in the present Everglades National Park area.” For local residents, taking deer and turtles for home consumption or alligators and frogs as marketable commodities was a long-established way of life. The NPS’s mission was to end all of these activities in the new park. Park staff would accomplish this by education and warnings if possible, but would make arrests and seek convictions where necessary. As a new park, Everglades also had to buy boats, patrol cars, and other vehicles for its rangers. At first, hunters and trappers had vehicles specially adapted to the environment—airboats and swamp buggies—that the NPS lacked. Superintendent Beard moved to get this equipment. By fall 1950, the park was running regular airboat patrols. Another early task was posting signs along the park boundary. These served as a warning to those who wanted to exploit resources and kept them from claiming they did not know they were on park land.¹⁰⁰²



Figure 21–2, rangers and other staff, winter 1951/52

¹⁰⁰¹ 52 Fed. Reg. no. 22 (Feb. 3, 1987); SAR, 1986; R. Bruce Ganttt, personal communication, Nov. 29, 2012.

¹⁰⁰² Beard, “A Proposal”; RDR1 Allen to Dir., Aug. 16, 1950, NARA II, RG 79, NPS Dir. Recs., Drury, box 7; SMR, Feb. 1949, Jan. 1950, Oct. 1950, Sept. 1951.

The superintendents' monthly reports for the park's early years are full of references to rangers finding evidence of hunting in the park and sometimes confronting the hunters. Local residents, for example, were accustomed to taking sea turtles for food. In June 1948, Ranger Willard Dilley came upon seven Flamingo residents "turning turtles" on the Cape Sable beaches. Both sides were armed; after words were exchanged, the residents reluctantly returned to their boats and abandoned the hunt. Deer hunting was also quite popular. Superintendent Beard put a stop to some organized deer hunting that involved airplanes to spot the prey, airboats to bring the hunters in, and trucks waiting on the Tamiami Trail to haul away the carcasses. In 1951, rangers reported that locals were astonished that they were enforcing the state's stone crab season in park waters. In fall 1954, four men were found in the park on airboats with rifles and other accoutrements of the deer hunter. As the case moved forward, it emerged that the police chief of Homestead would have been in the party had he not been back at their base camp nursing a hangover. The four men were found guilty by a federal jury in Miami. Even after deer hunting had largely been stopped on federal property, it remained legal in season on the private inholdings in the Hole-in-the-Donut. Hunters had to bring their rifles through the park's main entrance, requiring park staff to issue dozens of weapon permits each year. Rangers also had to patrol to make sure hunters stayed on private property.¹⁰⁰³

Initially, the taking of alligators for their marketable hides was perhaps the most widespread resource violation that the NPS tried to stop. Selling gator hides to be used in purses and luggage historically was one of the few reliable sources of cash income for Everglades residents. Airboats and float planes made gator hunting considerably easier after World War II, and some hunters in the early 1950s even cleared primitive airstrips for small planes in the park. The valuable portion of the gator was the hide covering the belly. After cutting that away, the hunters left the carcasses, making it relatively easy for rangers to see where poaching had taken place. Much gator hunting took place at night, and it was very difficult to catch hunters in the act.¹⁰⁰⁴

The park banned private airboats as one protective step, and conducted day and night patrols, as staffing permitted, to stop gator hunting, sometimes using airplanes. Often the patrols were done in conjunction with Florida game wardens, who seemingly were emboldened by having federal officers to back them up. Much of the hunting was organized and supported by one major buyer of hides. Superintendent Beard learned his identity and put him out of business. As he put it, "The ringleader of the market hunters for alligators was smoked out in February [1950]. These 'phantom' hunters, swamp wise and army trained, have bothered the service along west coast areas since the park was created." Beard believed the regular operations of market hunters in the park had ended

¹⁰⁰³ SMR, June 1948, Apr. 1951, Dec. 1954, Nov. 1960.

¹⁰⁰⁴ SMR, Oct. 1947, Apr. 1948, Sept. 1951.

and noted with satisfaction: “The poaching fraternity plays cops and robbers with other people now, not with us.”¹⁰⁰⁵

Alligator hunting receded as an issue for park rangers until, paradoxically, Florida banned it. Florida prohibited all hunting of alligators as of July 29, 1961, causing prices for illegally obtained hides to skyrocket. In 1965, Ranger Richard Stokes told a reporter that hides were going for a minimum of \$5 a foot (2014 equivalent of \$38). In the 1960s, the park stepped up its enforcement efforts, as staffing allowed. By August 1962, the park was again using night patrols to try to stop poaching. From August to October 1965, it launched “Operation Protection,” which involved fielding four, two-man ranger teams to patrol against poachers. No hunters were caught, but the operation was felt to be a deterrent. Incoming Secretary of the Interior Walter Hickel in 1969 flew to the Everglades and announced a war on alligator poachers. Hickel promised the park a \$100,000 budget increase and ten additional law enforcement rangers. Illegal taking of alligators largely ended after 1969, when Congress placed the species under the protection of the Lacey Act, making it a federal offense to transport the hides across state lines. As described in Chapter 12, alligator populations grew tremendously after 1970, and Florida in 1986 instituted a limited hunting season on private lands.¹⁰⁰⁶

Resource protection in the park’s early years sometimes involved practices that are today not sanctioned by NPS policy. In the winter of 1947/48, park staff were very concerned that the large rookery at Rookery Branch in Shark River had failed to form for two consecutive years. Superintendent Beard received permission from Director Drury for his rangers to shoot vultures and crows in the vicinity with small caliber rifles.¹⁰⁰⁷

Evolution of the Division

Staffing in Resource and Visitor Protection increased gradually throughout the 1960s, surged in the 1970s, then held largely steady through the late 1990s, and has since receded (figure 21–3, ranger with fishermen, 1967). In 1962, the division had seventeen permanent employees, all commissioned rangers except for a fire control aide and a clerk-stenographer. Eight years later, in 1970, the number of commissioned rangers was fourteen. By 1990, the park had thirty-six permanent rangers and nine seasonals. In recent years (2008–2010), limited funding has allowed the park to fill just twenty-four or twenty-five of

¹⁰⁰⁵ SMR, Feb. 1950; Supt. Beard to park staff, May 19, 1952, NARA Ph, RG 79, 79–58–360.

¹⁰⁰⁶ *Washington Evening Star*, March 17, 1965 [article title cut off], EVER 42054; Martha A. Strawn, *Alligators: Prehistoric Presence in the American Landscape* (Baltimore: Johns Hopkins University Press, 1997), 121, 142; SMR, July 1961, Aug. 1962, Oct. 1965; “Hickel Orders War on Gator Poachers,” *Miami Herald*, Mar. 9, 1969; South Carolina Department of Natural Resources, <http://www.dnr.sc.gov/marine/mrri/acechar/specgal/gator.htm>.

¹⁰⁰⁷ Dir. Drury to RDR1, Dec. 30, 1947, EVER 22965.

thirty-three authorized full-time law enforcement ranger positions and six to eight seasonal ranger positions. In the mid-1970s, the Miccosukee Tribe of Indians of Florida established a police department. Until July 2000, the members of the Miccosukee force carried federal deputations, under a memorandum of understanding (MOU) with the NPS. This gave them the authority to enforce federal laws and DOI regulations in the Miccosukee permit area. The last five-year memorandum of understanding was signed in July 1995. In October 1998, the passage of the Miccosukee Reserved Area Act gave a new status to the tribal members living in the permit area, and the MOU was not renewed.¹⁰⁰⁸

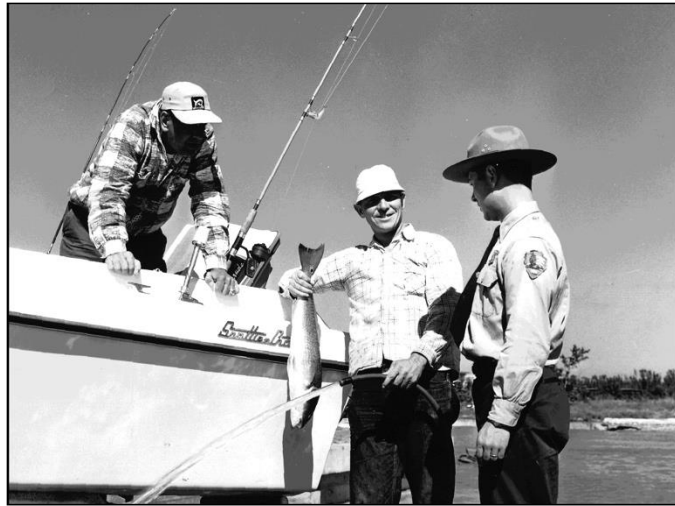


Figure 21-3, ranger with fishermen, 1967

The park's location next to a major metropolitan area means that urban crime at times spills over into it. In 1958, the superintendent noted that "riff-raff from the Miami area continue to be law enforcement and nuisance factors." The more serious crimes in the park have mostly been theft, vandalism, and bringing in banned weapons. Crimes against persons have typically been quite rare. The park had twenty-two larcenies from automobiles and forty-six burglaries in 1974, but in 1986, just thirty crimes were reported to staff; more undoubtedly occurred but were not reported. Because of the number of areas within the park where visitors may park their cars, car clouts are difficult to prevent. Vandalism has fluctuated; ten cases were noted in 1990, but as rangers began patrolling newly acquired lands in the East Everglades, vandalism spiked. To deter thefts from autos, the park in 1999 installed video cameras in the parking lot at the main visitor center. In 2002, rangers issued citations or made arrests for one burglary, thirty-nine larcenies, and one case of arson. Through the years, speeding and unsafe driving on the main park road have been an issue. The road is shared by fishermen who often want to

¹⁰⁰⁸ ENP Master Plan, 1962; SAR 1974; R. Bruce Gantt, personal communication, July 29, 2013; NPS and Miccosukee Tribe of Indians of Florida, Memorandum of Understanding, July 13, 1995; Reed E. Detring, ENP Chief Ranger, to Anthony G. Zecca, Chief of Police, Miccosukee Tribe of Indians of Florida, ENP R&VP files.

head expeditiously to Flamingo and nature lovers who brake for bird sightings. In recent decades, the road's speed limit has been 55 mph, with lower limits at intersections and congested areas. In 1988, the average speed of a ticketed violator was 74 mph. The speed limit on Research Road was reduced from 45 mph to 35 mph in 2008, largely to protect wildlife, which can enter the road suddenly. Yearly traffic incidents in the 2000s ranged between 900 and 1600. Rangers in recent years have stepped up safety inspections of private boats. Boating incidents in the 2000s ran from 1,200 to 3,400.¹⁰⁰⁹

The addition of some 107,000 acres in the East Everglades in the 1990s added substantially to the division's workload. The situation in this area in some ways resembled the situation prevailing throughout the Everglades when the park was established in 1947. The area was on the western fringe of Dade County, and existing laws were not consistently enforced. Once the land was acquired, rangers would have to eliminate a number of incompatible uses. Pine Island District Ranger Bob Panko observed that the area "had been used for satanic rituals, paramilitary training, target practice, drug cultivation and importation, and the dumping of all kinds of trash."¹⁰¹⁰ Hunting and frogging were other common uses. He projected that the division would need at least eight additional commissioned rangers to police the new acreage. The 1993 superintendent's annual report noted: "East Everglades continues its tradition of presenting unusual and challenging enforcement situations. This includes investigation of 100 incidents of vandalism and malicious mischief to government property." After all of the East Everglades acreage was acquired, law enforcement problems lessened.¹⁰¹¹

Search and rescue and the provision of emergency medical care are major division responsibilities. Almost all search and rescue efforts are water-based; few visitors venture very far into the backcountry on foot. Canoeists overdue in the backcountry and boaters who run out of gas or run aground in Florida Bay are the most common situations to require search and rescue operations. Search and rescues operations ran as high as 153 in 1980, but more recently have averaged thirty to sixty per year. The division has had an EMS coordinator position since at least the mid-1980s, and most rangers are certified emergency medical technicians. Medical emergencies range from visitors falling off bicycles to heart attacks. The division has a good working relationship with Miami/Dade Fire and Rescue, which dispatches medical evacuation helicopters when needed.¹⁰¹²

¹⁰⁰⁹ SMR, July 1958; SAR, 1974, 186, 1988, 1999, 2003 through 2008; Superintendent's Compendium, 2008 and 2011, EVER 1827; Bonnie Foist, interview by author, Oct. 10, 2011. Reported ranger contacts (incidents) with boaters and motorists are, of course, affected by available staffing; rangers are often called away from routine patrol for other duties.

¹⁰¹⁰ It is unclear whether this is a value judgment or perhaps a misconstruction of the practices of the Santeria religion.

¹⁰¹¹ Robert A. Panko, Pine Island District Ranger, Funding Alternatives for East Everglades: A Report to Identify Problems and Recommend Funding Alternatives for FY92, EVER-00777.

¹⁰¹² SAR, 1980, 1988, 1990, 2002; Bonnie Foist, interview by author, Oct. 10, 2011.

Natural Resource Management

In the early decades, the division had more resource management duties than it does now (figure 21–4, moving a gator, 1960s). These included duties such as trapping and relocating raccoons that threatened turtle eggs, removing exotics like Australian pine, and monitoring and recording wildlife populations. After the 1976 creation of the South Florida Research Center, the center took on more of these responsibilities. At this writing resource and visitor protection continues to take part in field-level resource management activities. Some rangers find the opportunity to work with wildlife especially rewarding. Flamingo District Ranger Tony Terry has described his work with sea turtles in these terms:

I called it a turtle rodeo back then. We used to go out and catch the loggerhead sea turtles by diving off the front of the boat and bringing them up to the surface, putting them on the john boat, cutting tumors off of them, taking a blood sample, and weighing them. I thought it was the most awesome thing—I can do this and arrest people in the same job?



Figure 21–4, moving a gator, 1960s

Another example of ranger staff involvement in natural resource protection is curbing the commercial harvesting of saw palmetto berries. In 1993, law enforcement staff issued forty citations to berry collectors, who were receiving up to 32 cents a pound (2014 equivalent of 53 cents) for the berries.¹⁰¹³

¹⁰¹³ SAR, 1993.

Dispatch

The dispatch function, which entails maintaining and facilitating radio communications among park staff, is one of those vital but routine areas where documentation often is not retained. Superintendent Beard reported in January 1949 that the park's radio communications system was operating satisfactorily. The park's system has relied on repeaters placed on towers at Pine Island, Flamingo, Shark Valley, and other locations. For a number of years, dispatch and fee collection at the main entrance were the responsibility of the Pine Island Ranger District. In 1988, the Chief Ranger's Office became responsible for the dispatch function, and in 1990 an operations center with new equipment for dispatch opened in the headquarters building. Dispatch handles radio communications for all four South Florida park units. It also handles occasional requests for assistance from other park units, notably Virgin Islands National Park. At this writing, dispatch has six full-time employees, so that the operations center can operate continuously. A former chief ranger, the late Bonnie Foist, described the dispatch staff as the park's unsung heroes.¹⁰¹⁴

Special Park Uses/Permitting

The park issues commercial use authorizations (formerly known as incidental business permits),¹⁰¹⁵ commercial filming/photography permits, and special use permits for certain activities occurring within its boundary. Commercial use authorizations cover guide fishermen who charge customers and guides who bring bird-watching or other organized groups into the park. Anyone wishing to film in the park for a project aimed at a market audience needs a commercial filming/photography permit. Special use permits cover activities, such as weddings or charity events, that benefit an individual or organization rather than the public at large. Requests for permits and authorizations must be reviewed for compliance with park policy and evaluated for their impact on resources and visitors.

All of these permitting activities are the responsibility of Resource and Visitor Protection Division at this writing. In 2008, the park established the position of special park uses program manager. This position oversees the issuance of permits and commercial use authorizations. As of this writing, a part-time permit examiner is on the staff, largely occupied with guide fishing permits. Processing the fishing guide permits, which recently have totaled 300 to 325 per year, occupy considerable staff time. All other commercial uses generally run to twenty-five to forty per year. The park is a popular location for the

¹⁰¹⁴ SMR, Jan. 1949; SAR, 1980, 1988, 1990; Bonnie Foist, interview by author, Oct. 10, 2011.

¹⁰¹⁵ The NPS makes a distinction between commercial uses that typically begin and end outside of the park and concession activities, which generally involve a permanent presence within the park. The former are covered by commercial use authorizations and the latter by concession contracts.

filming of documentaries, advertisements, and other types of videos aimed at a market audience. In 2010, the park issued thirty-one filming permits. In February and August 2004, crews from Ken Burns's production team were in the park filming for his documentary. Because Burns was filming in multiple parks, the NPS Washington Office largely established the guidelines for his work. Ranger staff, of course, needed to be on hand to monitor the film crews.¹⁰¹⁶

Fees

The park instituted modest fees for commercial vehicles (e.g., tour buses) that carried visitors in 1959, charging \$3.00 per passenger seat for a yearly permit. The park had no entrance fees for visitors in private automobiles or for camping until 1966. As of July 1, 1966, the park began charging a daily fee of 50 cents for an individual and \$1.00 per private vehicle entering at the main entrance. A thirty-day pass was \$1.50 for an individual and \$3.00 for a vehicle. An annual pass was \$7.00 per vehicle. The daily fee for a vehicle was raised to \$2.00 within a year or so and in March 1987 became \$5.00 at the main entrance and \$3.00 at Shark Valley. In 1996, Congress established the recreational fee demonstration program. This program provided that 100 percent of fees collected would remain with the NPS, with the individual park retaining 80 percent and the remaining 20 percent allocated throughout the service at the NPS director's discretion. In the wake of this legislation, Everglades National Park in May 1997 established a daily vehicle fee of \$10.00 at the main entrance and \$8.00 at Shark Valley. In 2004, the fee at Shark Valley became \$10.00. In December 2004, Congress passed the Federal Lands Recreation Enhancement Act as part of the Consolidated Appropriation Act of 2005. This act replaced the fee demonstration program and provided new authorities to the NPS and other federal land management agencies to collect user fees and issue annual passes.¹⁰¹⁷

At this writing, the vehicle fee for using the park for from one to seven days remains \$10.00, with a fee of \$5.00 for a pedestrian or bicyclist. Yearly park passes are currently \$25.00. There has never been a fee at the Everglades City visitor contact point. The initial fees for camping in 1966 were \$2.25 per day for a drive-in campsite and \$1.50 for a walk-in site. In 1991, the fee for sites at Flamingo was \$8.00 a night and at Long Pine

¹⁰¹⁶ SAR, 2008, 2010; Bonnie Foist, interview by author, Oct. 10, 2011.

¹⁰¹⁷ 24 Fed. Reg. 2643 (Apr. 7, 1959); *The Anhinga*, Nov. 1966; SMR, July 1966; "New Entry Fees Announced for National Parks and Historic Sites," *Chicago Tribune*, Apr. 17, 1988; "Everglades National Park Reopens," NPS media release, Dec. 15, 1992, HFC; "National Parks Raise Fees for '97," *Chicago Tribune*, Dec. 31, 1996; Everglades National Park, <http://www.nps.gov/ever/planyourvisit/feesandreservations.htm>; "Concessioner to Operate Campgrounds at Everglades National Park," DOI press release, Dec. 22, 1968, HFC; Omnibus Consolidated Rescissions and Appropriations Act of 1996; Consolidated Appropriations Act of 2005, P.L. 108-447, Dec. 8, 2004.

Key, \$10.00 a night. At present, a campsite at Long Pine Key or Flamingo costs \$16.00 per night; a site with an electrical hook-up at Flamingo goes for \$30.00.¹⁰¹⁸

When the park began collecting a \$1 entry fee per car in 1966, seasonal rangers collected it, and the ranger division became responsible for this aspect of operations. For a number of years, it appears that fee collection was a responsibility of the Pine Island Ranger District. For a period in the 1990s, the park's administrative division handled the monetary aspects of fee collection. In 2003, a fee programs manager position was established within the Resource and Visitor Protection Division. As of this writing, the full-time fee program manager supervises seven permanent fee collectors and six to eight seasonal campground fee collectors. Revenues received from fees have to be weighed against the costs, chiefly personnel costs, of collecting the fees. Prior to fiscal year 2007, the main entrance station was open twenty-four hours a day, seven days a week, resulting in a high cost of collection. The hours were reduced to sixteen, then to thirteen hours per day. As of fiscal year 2010, the park's cost of collection was 37 percent.¹⁰¹⁹

Fire and Aviation

The park's wildland fire program was a Resource and Visitor Protection Division responsibility until 2014, when it was transferred to the SFNRC. The fire program is covered in Chapter 15. Airplanes and helicopters are important tools in patrolling and conducting resource management and monitoring activities in the park. The division has had aircraft operations as a responsibility for the greater part of the park's history. In the early 1950s, the park rented aircraft when needed. Ranger-pilot Ralph Miele was responsible for getting the park its own airplane. Late one afternoon in 1958, Miele noticed that a Piper Supercub PA-18 based in Salt Lake City had appeared on a list of surplus federal property. He interrupted a conversation between Superintendent Beard and Assistant Superintendent George Fry to alert them of the opportunity. When Beard said he would write a letter about it, Miele observed that another agency surely would have claimed the plane by the time the letter arrived. After carefully considering the effect on his budget, Beard decided to incur the expense of sending a telegram, and Miele was soon on his way to Utah to fly the plane to Florida (figure 21-5, the park's first airplane). On March 11, 1961, this plane was burned in an arson fire at its hangar at a civil aviation airport outside the park. The FBI, the Dade County Sheriff, and the Dade County Arson Squad investigated, but no suspects were ever identified. Ralph Miele, who was the park's ranger-pilot at the time, remained convinced that disgruntled park neighbors set the fire.¹⁰²⁰

¹⁰¹⁸ Tenia Fleming, personal communication, July 30, 2013, based on files in EVER chief ranger's office.

¹⁰¹⁹ SAR, 2003, 2008, 2010; Bonnie Foist, interview by author, Oct. 10, 2011.

¹⁰²⁰ SMR, Mar. 1961; Ralph Miele, interview by author, June 13, 2012.



Figure 21-5, the park's first airplane

The park got a replacement for the burned aircraft in July 1961, a four-seat Lake Aircraft amphibious airplane, which was based at Homestead Air Force Base, where it had more security. By 1981, the park had the Lake aircraft and a Widgeon plane. Within a few years, the Lake needed extensive repairs and the Widgeon became very costly to maintain and operate. In 1984, the NPS Office of Aircraft Services studied the air operations at EVER and BICY (Big Cypress National Preserve). Following its recommendations, the park sold its aircraft and began contracting for fixed-wing and helicopter flights.¹⁰²¹

Policing the Activities of Inholders

Nike Missile Base

As related below in Chapter 22, the U.S. Army opened a Nike Hercules surface-to-air missile base in the Hole-in-the Donut in 1965. The arrival of 100 to 125 mostly single young men at the base added another dimension to ranger responsibilities. Bored soldiers are liable to create mischief, and surviving records indicate that those stationed inside the park occasionally did. In December 1966, two GIs were court-martialed and reduced in rank for driving the wrong way on the park entrance road and nearly causing an accident. The next month saw the following incident:

The Chief Ranger assisted ranger personnel in breaking up a drag race on the Long Pine Key Road. The six men involved, from the Missile Site in the Hole-in-the-Donut, were turned over to their Commanding Officer who reduced them in rank, gave them extra duty and restricted the men to the base.

¹⁰²¹ Ralph Miele, interview by author, June 13, 2012; SMR, Mar. 1958, June 1961; SAR, 1981 and 1984.

Things remained lively up to the end of the army's use of the site. In 1978, rangers responded to two case of soldiers reported away without leave. When the park later drained the pond in the borrow pit at the base, they discovered a number of automobiles dumped there by servicemen. Many of these appear to have been vehicles damaged in crashes within the park. If those same vehicles were then reported to insurance companies as stolen, who would know any better?¹⁰²²

After the missile base became NPS property, law enforcement personnel began to use the berms at the launch area for small arms target practice. It is also possible that U.S. Army personnel previously had used the berms for the same purpose. NPS personnel used the firing range from 1984 to 2000. This resulted in the accumulation of a significant amount of bullet fragments containing lead. An evaluation conducted by a contractor in 2010 showed that Berms A and C contained lead-impacted soil and gravel. The NPS obtained funding near the end of FY 2011 to remediate the contaminated portions of the berms. To get the funds obligated in time, the park executed a task order under an existing indefinite delivery/indefinite quantities contract, and the NEPA and Section 106 compliance process was rushed. The description of the project reviewed by the compliance team was very general, indicating only that contaminated materials would be removed and trucked to a landfill and that the berm contours would be restored. There were no details about how the project would be accomplished and what equipment would be used. This made it impossible for reviewers to recommend specific measures to avoid damage to the historic resources. Based on the 2010 evaluation of the berms, the park believed the contract would accomplish all remediation needed.¹⁰²³

As the first task under the contract, the contractor, PRIZIM, Inc., in early 2011 investigated and characterized the berms and proposed a remediation plan with a cost estimate. The extent of contamination proved to be considerably greater than indicated in the 2010 evaluation, and the cost estimate for full remediation was seven times the contract amount. The contracting officer and the park maintenance division accepted the contractor's suggestion to divide the work into phases. In the first phase under the existing contract, PRIZIM agreed to accomplish a partial remediation of Berm C. The firm also prepared a plan for subsequent phases, to be accomplished in the future when funds became available. Another change agreed to by the park and the contractor and approved by the Florida Department of Environment Protection was to treat the contaminated material on-site with a reagent mixture containing phosphate and

¹⁰²² SMR, Dec. 1966, Jan. 1967; SAR, 1978; Steve Hach, *Cold War in South Florida Historic Resources Study* (Atlanta: NPS, 2004), 82.

¹⁰²³ NPS, Categorical Exclusion Package, Characterization and Mitigation of EVER Small Arms Firing Range, July 13, 2011, ENP Planning & Compliance Division files; Ken Quinn, Mike Amstadt, and Mark Shoaf, TRC Environmental Corp., to Robert France, PRIZIM, Inc., Dec. 28, 2012, ENP maintenance files; Abby Sadle, personal communication, Nov. 5, 2014.

magnesium oxide. The original project plan called for trucking the removed material to a landfill licensed to receive hazardous waste. To cut costs, the park agreed to on-site treatment, allowing the material to be trucked to a regular landfill with lower fees. Treating the material onsite with phosphorous posed a risk of releasing this nutrient into the environment. These changes to the scope of work for the remediation were not subjected to NEPA and Section 106 review; the project managers relied on the prior approval of the conceptual plan for remediation.¹⁰²⁴

Removal and treatment of the contaminated material began in September 2012. The contracting officer's technical representative (COTR) assigned to the project was new to the NPS and had not been involved in planning the project. In the preconstruction meeting with the contractor, the historic importance of the entire missile site was probably not adequately conveyed. To accomplish the work, PRIZIM brought in a large backhoe with metal tracks to remove material from the berms. The firm began removing material with the backhoe and treating it on-site. Repeated runs of the backhoe soon began to crack the concrete apron of the missile launch area, a contributing feature of the historic site. When the COTR's supervisor learned of the damage, he consulted with park cultural resource and compliance staff and stopped the project. Rather than risk further damage by removing the 250 tons of treated soil to a landfill off-site, the park decided to have it replaced in the berm as a temporary measure. When funding becomes available, the already-treated material will be removed, and the remaining remediation undertaken. PRIZIM expressed some willingness to repair the concrete apron, but balked at following detailed protocols to safeguard the historic features, and the park simply closed out the contract. The park conducted a review of the circumstances leading to the cultural resource damage with the goal of adjusting park procedures to prevent a recurrence.¹⁰²⁵

Iori Farms

The tomato-growing activities of the Iori brothers in the Hole-in-the-Donut brought another contingent of mostly young men to the park. From late 1955 until the middle 1960s, farm laborers lived on-site in a bunkhouse and others commuted from outside the park, adding to traffic and weapon possession issues. In January 1959, rangers helped prevent an attempted hold-up of the payroll for the Iori farm workers. The chief ranger described the incident:

¹⁰²⁴ After-action Review of Nike Missile Base Mitigation Incident, interviews with Jose Baerga, Abby Saddle, Nancy Russell, and Mike Savage, Feb. 2013, EVER-02080.

¹⁰²⁵ After-action Review of Nike Missile Base Mitigation Incident, interviews with Jose Baerga, Abby Saddle, Nancy Russell, and Mike Savage, Feb. 2013, EVER-02080; Abby Saddle, personal communication, Nov. 5, 2014.

An attempted holdup of the Iori payroll was thwarted when advance notice leaked out. An off-duty Dade County deputy sheriff followed the payroll car and when the two hijacking cars attempted to force the payroll car off the road, the deputy moved in and drove off the “bandits.” One of the holdup cars was caught in a Park Ranger road block thrown up and its occupants taken before the U.S. Commissioner. Since these people could not be definitely tied in with the holdup, one of the men, found with a revolver on his person, was fined \$150, suspended on the condition that he stay out of the Park, and firearm confiscated.¹⁰²⁶

In January 1961, the state health department temporarily closed the Iori camp for sanitation violations, and the chief ranger noted that the move lessened poaching and traffic problems until the camp reopened.¹⁰²⁷

Running Illegal Drugs

Park rangers dealt with relatively few serious crimes until drug running emerged as a serious challenge in the late 1970s. Demand for marijuana as a recreational drug in the U.S. soared in the 1960s and 1970s. When U.S. and Mexican authorities cracked down on imports from Mexico in the 1970s, growers along the Caribbean coast of Columbia stepped in. By the late 1970s, an estimated 70 percent of the marijuana coming into the country originated in Columbia. The run across the Caribbean Sea and Gulf of Mexico from Columbia to Florida was a relatively easy one, and Southwest Florida was an ideal transshipment point. In some cases, boats from Florida went to Columbia to get cargoes; in others, large “mother ships” from South America rendezvoused offshore with smaller boats dispatched from the Florida coast. Private planes were also used in the trade. “Square grouper,” as the bales of weed were known locally, became a far more lucrative commodity than grouper that had fins. Marijuana was landed from Cape Sable to the Fort Myers area, and many trips ran through or ended in the park (figure 21–6, rangers with “square grouper”). As one superintendent observed, the park had 130 miles of unpatrolled coastline and uncounted numbers of inlets where illicit cargoes could be off-loaded. The park never had sufficient funding to maintain regular drug interdiction patrols, but routine patrolling for other reasons led to a significant number of seizures and a few arrests. Park rangers also worked with other law enforcement agencies to tackle a problem that affected the whole region.¹⁰²⁸

¹⁰²⁶ Monthly Narrative Report of Ranger Activities, Jan. 1959, EVER 28442.

¹⁰²⁷ SMR, Sept. 1955, Jan. 1961.

¹⁰²⁸ Dennis M. Hanratty and Sandra W. Meditz, eds., *Colombia: A Country Study* (Washington: GPO for the Library of Congress, 1980), <http://countrystudies.us/colombia/59.htm>; SAR, 1985.

The growing drug trade was reflected in the number of marijuana bales confiscated by park rangers. In 1978, marijuana with a street value of \$6 million was seized within the park, and the following year, the superintendent reported that “drug traffic is intensifying at an alarming rate.” He also made what became a common complaint—that drug runners had better vehicles, boats, radios, automatic weapons, night scopes, and radars than rangers. From 1980 through 1984, rangers seized between 700 and 900 marijuana bales annually. They made only a handful of arrests because smugglers usually abandoned their cargoes and even their boats when discovered.¹⁰²⁹ A February 1982 memo from the Everglades City district naturalist gives some insight into this period. The naturalist and his colleague Ben Bailey were canoeing up Deen’s Creek in the mangrove zone and reported this incident:

[A]bout half a mile up the creek, around the first bend, two T-boats were parked, and had about \$500,000 in bales. The tide was too low for the boats to move out. . . . Bailey and I backpedaled the Hell out of there—double time—and told the rangers. . . . Later that day, they arrested 2 of [*sic*] local natives & with the help of the deputies, etc., brought the boats back to the station. You’ll probably read about it all in the *Miami Herald*.¹⁰³⁰



Figure 21–6, rangers with “square grouper”

¹⁰²⁹ SAR, 1979, 1980, 1981; Jason Houck, Chief Ranger’s Office, to Supt., Oct. 29, 1984, EVER 58222.

¹⁰³⁰ District Naturalist, Everglades City, to Al, Karen, Feb. 15, 1982, EVER 22965.

Many of the fishermen and other mariners of Everglades City and Chokoloskee succumbed to the lure of easy money promised by the marijuana trade. Residents with an average annual income of \$17,000 could make \$10 to \$30 thousand for a single night's work running marijuana. Those with bigger boats and the nerve and canniness to sail to Columbia could make many multiples of those amounts. The live-and-let-live atmosphere of the area was conducive to tacit acceptance of the drug trade. Some in the tightly knit community of Everglades City, with its extensive kinship networks, saw marijuana running as no more serious an offense than rum running during prohibition. In any event, no one was going to turn his neighbor or his cousin in to authorities. Area residents became increasingly cavalier about flaunting their newfound wealth. When men who used to wear jeans and drive beat-up pickup trucks started sporting heavy gold necklaces and driving Lincolns, no one had much doubt about the source of the cash. U.S. Drug Enforcement Agency and local officials began an undercover investigation, with help from law enforcement rangers from the park's Gulf Coast District.¹⁰³¹

The beginning of the end of Everglades City's marijuana-fueled prosperity came on July 7, 1983. At 3:00 that morning, local, state, and federal authorities set up a roadblock on State Route 29, the only road to the city. They arrested 200 people and seized fourteen fishing boats, two airplanes, 350,000 pounds of marijuana, and \$5 million in other assets. Smuggling did not immediately stop, and authorities patiently worked up additional evidence, then conducted more mass raids in summer 1984. In 1987, the states attorney's office operated a fish house in Everglades City and used it to build relationships in the community and gather information on smuggling. Over time, by plea-bargaining with lower-level operatives in exchange for information on others and imposing sentences of up to forty years on those who would not inform, authorities largely ended organized drug running in and around Everglades City. Among those who refused to turn state's evidence was legendary Gladesman Loren "Totch" Brown. He forfeited cash and property worth more than \$3 million and served 18 months of a three-year sentence. Brown told a reporter, "I would die before I would testify against my friends." Community distrust and anger toward the government were heightened by the tactics used by the authorities in combating the drug trade. As described previously in Chapter 19, there was already considerable animosity over prior bans on commercial fishing and alligator hunting. To some in the community, the drug busts added to a sense of ill-usage by the authorities.¹⁰³²

¹⁰³¹ Lori Rozsa, "The Town That Dope Built," *Miami Herald*, Dec. 16, 1990; SAR, 1983.

¹⁰³² SAR, 1983; "Everglades City Residents Tire of Town's Reputation as Drug Smuggling Have," *Miami Herald*, Nov. 25, 1984; "48 Named in Smuggling Indictments," *Miami Herald*, Oct. 13, 1989; "Hush Puppies Replace Drugs in Florida Town," *Los Angeles Times*, Jan. 9, 1995.

Closing down the Everglades City operations, increased patrols by the U.S. Coast Guard and Customs Service, and changes in American drug use patterns made drug trafficking a significantly smaller issue for the park by 1990. More high-quality marijuana began to be grown in the U.S., and recreational users turned increasingly to cocaine. Cocaine is a lot less bulky than marijuana and often was flown in on airplanes to airstrips strung across the country. There was no particular advantage in landing it in Southwest Florida. As of today, ranger involvement with illegal drugs is largely limited to the occasional citation for private use at campgrounds or elsewhere in the park.¹⁰³³

Running Refugees

Following the 1959 Cuban Revolution, refugees traveling through park waters or landing on park lands became an issue for the ranger force. The superintendent noted in June 1962 that U.S. Border Patrol agents were in the park consulting with ranger staff on refugee issues. Over five decades, the flow of Cuban immigrants has fluctuated largely based on changing conditions in Cuba. Since 1995, U.S. law has granted special status to Cuban immigrants once they are on American soil. This provides a strong incentive for smugglers to land immigrants in a safe and prominent place and then high-tail it.¹⁰³⁴ People smugglers have generally preferred other landing spots in Florida rather than areas in the park, but the Cape Sable beaches are sometimes used. A group is dropped on the beach in the early morning, and usually a fishing boat captain notices them at first light and contacts the park. In the 2000s, the park averaged one or two human trafficking events per year. Each year from 2006 through 2009, one group of migrants ranging in size from twenty-four to forty-six people were landed at Cape Sable. Park rangers primarily provide humanitarian assistance to refugees. As one former chief ranger, Bonnie Foist, put it: “We bring them to Flamingo, make sure they’re safe, give them water, contact the Border Patrol, and they come down and take them off our hands and process them.” Smugglers of people and drugs watch the activities of rangers in the Flamingo district closely, hoping to detect patterns of activity, so that they make runs when they are least likely to encounter a patrol. For this reason, the district ranger does his best to alter the schedules and reduce predictability.¹⁰³⁵

¹⁰³³ SAR, 1988.

¹⁰³⁴ It is illegal to smuggle aliens from any country into the United States. Individuals who are caught in the act of bringing in Cubans are not often prosecuted by the U.S. Attorney in Miami because many in the local community support running refugees from Cuba and it is difficult to convince a jury to return a conviction. 8 U.S.C. 1321; Melissa Memory, personal communication, June 28, 2013; R. Bruce Gantt, personal communication, July 29, 2013.

¹⁰³⁵ Everglades National Park Human Smuggling Activity, PowerPoint file, ca. 2009, EVER 22965, SMR, June 1962; Bonnie Foist, interview by author, Oct. 10, 2011 and Tony Terry, interview by author, Jan. 18, 2012.

Notable Accidents

Everglades National Park lies near Key West Naval Air Station, Homestead Air Force Base, Miami International Airport, and several civil aviation airfields. From time to time, aircraft go down in or near the park, requiring a response from park staff. Before the main park road was completed in 1957, motorists had to cope with the sharp turns and uneven road surface of Ingraham Highway. The new road eliminated many of the sharp turns while incorporating some sections of Ingraham Highway. Some of the more noteworthy plane crashes and automobile wrecks in the park are described below.

In June 1950, Park Biologist Joseph Moore was injured in a plane crash.¹⁰³⁶

On February 1, 1952, the park's Chief Clerk James Smith was killed in an automobile accident that also took the life of the driver of the other vehicle. Smith was driving to the park in a government car when he collided with a truck at an unmarked intersection. Superintendent Beard called Smith the de facto executive officer for the park and lauded his contributions in getting the park up and running.¹⁰³⁷

In July 1952, a U.S. Marine Corps Hellcat fighter plane crashed in the park, killing the pilot, Captain Richard E. Otto. Rangers located the crash site and removed the pilot's remains.¹⁰³⁸

In February 1953, three visitors from California were killed in car crash on Ingraham Highway, ending up in the canal alongside the road. Superintendent Beard and rangers helped recover their bodies.¹⁰³⁹

In June 1954, alert park staff helped rescue the sole survivor of the crash of two Marine Corps dive bombers over the Shark River portion of the park. Two single-engine Douglas Skyraiders from the Opa-Locka Marine Corps Base in Miami collided at an altitude of about 4,000 feet. Private William G. Collier was thrown from one plane and was able to pull the ripcord on his parachute. Smoke from the crash was seen by several park rangers. Acting Chief Ranger Ralph Maxwell sent a plane over the scene and the pilot saw a flare launched by the injured Collier from his life raft. A U.S. Coast Guard helicopter brought him out and park rangers helped remove the bodies of Lieutenant Ray M. Holton, Lieutenant Harry

¹⁰³⁶ SMR, June 1950.

¹⁰³⁷ SMR, Feb. 1952.

¹⁰³⁸ SMR, July 1952.

¹⁰³⁹ SMR, Feb. 1953.

Proodian, and Private John Costa. Some of the wreckage from this crash was never removed from the park, and the crash site has been recognized as an archeological site.¹⁰⁴⁰

On March 13, 1958, a six-engine B-47 Stratojet from Homestead Air Force Base, said to be on a routine training mission, exploded and crashed just east of Pine Island, killing the four crewmen on board. Debris from the crash was scattered over about a mile. The plane's crew were Major Leon F. Hatcher Jr., pilot; Lieutenant James Pennington, co-pilot; Major Frank H. White, instructor-pilot; and Captain George E. Reid, navigator. The March superintendent's report observed: "Rangers and Fire Control Aides assisted the Air Force by bringing out the bodies of the four airmen who were killed and transporting the investigating committee to the crash site in glades buggies." B-47s were the major carriers of American atomic bombs in this period. It is not known whether this plane was carrying them; the presence of an instructor on the flight suggests it probably was not.¹⁰⁴¹

A major crash of a commercial airliner in the park occurred on February 12, 1963. Northwest Orient Flight 705 was a Boeing 720 jetliner bound for Portland, Oregon, with stops in Chicago, Spokane, and Seattle. The plane crashed in stormy weather only seventeen minutes after take-off from Miami International leaving a ten-mile debris field from just south of the seven-mile tower westward. All forty-three passengers and crew on board were killed. Securing the site and assisting investigators from the Civil Aeronautics Board and the FBI put a heavy strain on ranger staff during the busy winter season. Rangers used swamp buggies to remove victims. Investigators were on the scene for some weeks as they partially reconstructed the plane.¹⁰⁴²

In August 1966, a private Cessna aircraft crashed in Florida Bay, with rangers assisting in the recovery of the bodies of the three passengers.¹⁰⁴³

On March 14, 1974, Earl Duvall, a pilot of the Miami Helicopter Service, and park biologists James Kushlan and James Tilmant were severely burned in a helicopter crash in Shark Valley not far south of the Tamiami Trail.¹⁰⁴⁴

In September 1981, the son of a high-ranking Venezuelan official was killed in an airplane crash in the park.¹⁰⁴⁵

¹⁰⁴⁰ SMR, June 1954; "Blast Blows Marine Clear as Planes Hit," *Chicago Tribune*, June 5, 1954; Ben Morgan, personal communication, Sept. 22, 2011; Everglades National Park, Archeological Sites Management Information System (ASMIS) database, EVER 00246.

¹⁰⁴¹ SMR, Mar. 1958; "5 Airmen Are Killed in Bomber Explosions," Associated Press story in Oklahoma State University's *Daily Collegian*, n.d. [Mar. 1958].

¹⁰⁴² SMR, Feb. and Mar. 1963; Monthly Narrative Report for Ranger Service Division, Feb. 1963, EVER 28442; "43 Killed in Chicago Jet!," *Chicago Tribune*, Feb. 13, 1963.

¹⁰⁴³ SMR, Aug. 1966.

¹⁰⁴⁴ "3 Men Burned in 'Copter Crash," *South Dade News Leader*, March 15, 1974; James Kushlan, interview by author, May 25, 2012.

¹⁰⁴⁵ SAR, 1981.

On February 2, 1982, two private planes, apparently returning from the Everglades Seafood Festival, collided over the park at around 5 p.m., killing eight people. This has been described as the worst private aviation disaster to that date in Florida.¹⁰⁴⁶

Three men were killed in February 1985 when their Piper Apache went down in Chokoloskee Bay shortly after taking off from Everglades City Airport. The victims were Peter Haines, Robert Anderson, and Kim Thompson.¹⁰⁴⁷

In April 1987, an apparently intoxicated student pilot took off from Key West in a Piper PA-28. He was killed when the plane crashed in the park, setting off a fire that burned twenty acres before park staff extinguished it.¹⁰⁴⁸

Four people were killed in two private plane accidents within a few days of each other in September 1989. On the 22nd, rangers on a routine helicopter patrol found the wreckage of a Cessna 150 in Shark Valley. Killed in the accident were Faras Simi and Liliana Salamanca. Two days later, two Miami doctors, Irwin Lighterman and George Daniel, died in the crash of their Cessna 172 about a mile from the Shark Valley tower.¹⁰⁴⁹

On November 9, 1990, a twin-engined private plane crashed inland of Cape Sable, killing the three people on board. The site was accessible only by helicopter, and park rangers assisted the Coast Guard in recovery operations.¹⁰⁵⁰

At the end of January 2004, a private twin-engined Beechcraft turboprop airplane went down in a densely vegetated section of the park about thirty miles southwest of Homestead. Saul Zadick and his fifteen-year-old son Timor were killed.¹⁰⁵¹

Two major commercial plane crashes occurred in the Water Conservation Area 3B north of the park boundary. On December 29, 1972, just before midnight, a Lockheed L-1011 Tristar, Eastern Flight 401, en route from John F. Kennedy International Airport in New York to Miami, crashed, killing 101 people, with seventy-five surviving. The plane was on its final approach into Miami International Airport when the pilots apparently became distracted by a warning light and failed to realize they were losing altitude. The plane came down some 300 yards from the Tamiami Trail. Many volunteers in airboats brought survivors from the crash scene. In the afternoon of May 11, 1996, ValuJet Flight 592 went down killing all 110 people on board. Early in the DC-9's course from Miami International Airport to Atlanta, smoke appeared in the cockpit and cabin. The pilots were on the way back to Miami when the plane

¹⁰⁴⁶ "2 Planes Crash in Everglades," Associated Press story in *Spokane Chronicle*, Feb. 8, 1982.

¹⁰⁴⁷ "Bay Waters Stall Probe of Crash," *Miami Herald*, Feb. 16, 1985.

¹⁰⁴⁸ "Crash Kills Pilot, Burns 20 Acres," *Miami Herald*, Apr. 18, 1987; "Flying High," *Miami Herald*, Aug. 30, 1987.

¹⁰⁴⁹ "2 Doctors Killed in Glades Plane Crash," *Miami Herald*, Sept. 25, 1989.

¹⁰⁵⁰ SAR, 1990; "3 Minnesotans Missing after Plane Crash in Florida," *St. Paul Pioneer Press*, Nov. 11, 1990.

¹⁰⁵¹ "2 Believed Dead in Plane Crash," *Miami Herald*, Feb. 1, 2004; "NTSB Official Says Weather May Have Been a Factor in 'Glades Plane Crash,'" *Sun-Sentinel*, Feb. 3, 2004.

went down about twelve miles from the airport and only about two miles from the site of the Eastern 401 crash. The crash impact created a large crater in the limestone underlying the marsh, making recovery of the fuselage and human remains very difficult.¹⁰⁵²

¹⁰⁵² “93 of 171 Aboard Jumbo Jet Survive Crash in the Everglades,” Associated Press story in the *Merced Sun-Star*, Dec. 29, 1972; “Crater Yields Largest Pieces of ValuJet Wreckage,” Associated Press story in *Beaver County Times*, June 4, 1996; William Langewiesche, “The Lessons of ValuJet 592,” *Atlantic*, Mar. 1998.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 22:
Relationships with the Military

Chapter 22: Relationships with the Military

From the Seminole Wars to the present day, South Florida has been the scene of military and paramilitary operations.¹⁰⁵³ Between the park's authorization and establishment, the U.S. beefed up its military presence in South Florida both before and after the nation entered World War II. The issue of the effects of military overflights on park values, therefore, was present from before the park's establishment in 1947. That event coincided with the onset of the Cold War between the U.S. and the Soviet Union, ensuring that a substantial military presence would remain in South Florida. As the nation's only subtropical region, the Everglades emerged as a favored place to test jungle warfare technologies. In the 1960s, as Cuba drew closer to the Soviet Union, the Cold War affected Everglades National Park in a surprising number of ways, reaching a crescendo during the Cuban Missile Crisis of October 1962.

During World War II, the U.S. military greatly expanded its presence in Florida and other areas of the South where cold weather was less likely to interfere with its operations. On the park's doorstep, the U.S. Army Air Force operated Homestead Air Field from 1942 until the end of the war. There had been a naval base at Key West since the 1820s; seaplanes were stationed there from 1917; and Naval Air Station Key West was established in 1940. The Navy established Naval Air Station Miami at Opa Locka Airport in 1939. During WWII, there were temporary air bases all around the area, including those at Hollywood and Boca Raton. In 1940, when the U.S. was improving its defense capabilities, the NPS intervened with the War Department to prevent 4,800 acres within the park's maximum proposed boundary from becoming a bombing range.¹⁰⁵⁴

Late in the war, Naval Air Station Miami was able to establish a bombing target on Otter Key, an 18-acre key located south of Rankin Bite and east of Flamingo. This bombing target was thought to have been included in a permit issued by the state of Florida in September 1944, but research by a Department of Defense contractor in 2010 failed to confirm this. The contractor was unable to find any documentation concerning the establishment of the Otter Key bombing target or the extent of target construction activity on the key. The Navy released the bombing target in late 1945. Pilots from Naval Air Station Miami likely would have fired .30 and .50 mm ammunition at the target and may have dropped practice bombs. A site visit in 2010 found .30 mm projectiles at the site, but no explosives residue, no bomb debris, no target remains, and no evidence of cratering from bombs. The contractor concluded that munitions constituents at the site did not represent a risk to humans or environmental receptors.¹⁰⁵⁵

¹⁰⁵³ See Chapter 1 for a brief summary of the Seminole Wars.

¹⁰⁵⁴ "Bombing Tract Plan Given Up," *Miami Herald*, May 16, 1940.

¹⁰⁵⁵ Parsons Infrastructure and Technology Group, *Final Site Inspection Report Otter Key Bomb Target, Monroe County, Florida, FUDS Project No. 104FL113401* (Jacksonville, FL: USACE, June 29, 2011), ES-1-ES-3, 1-1.

Homestead Air Force Base

Due to the precarious nature of national security following the Korean War, the base at Homestead was reactivated in 1955 as Homestead Air Force Base (AFB).¹⁰⁵⁶ The Air Force soon expanded the facility and made it a key Strategic Air Command (SAC) base. The creation of SAC bases began in March 1946 to expand American air power around the world. Its equipment included medium- and long-range bombers and reconnaissance aircraft. SAC planes also carried the nuclear weapons that the U.S. relied on as a deterrent, and this Air Force command took the lead in developing missile-based warheads in the 1950s. The superb flying weather, large over-water ranges, and nearby Avon Park Bombing Range in south-central Florida made Homestead an unmatched location for a SAC base. Homestead was base of operations for the 823rd Air Division, consisting of the 19th and 379th Bomber Wings, and the 407th Air Refueling Squadron. The bombers were B-47 Stratojets until 1960, when B-52 Stratofortresses began to arrive. In February 1962, Superintendent Warren Hamilton and his wife attended a luncheon and reception celebrating the arrival of the first B-52H at Homestead AFB. The bombers carried atomic weapons and stayed on ready alert, parked on the runway and ready to be airborne in minutes (figure 22–1, a B-52 bomber and its mission).¹⁰⁵⁷



Figure 22–1, a B-52 bomber and its mission

In 1962, the 31st Tactical Fighter Wing moved to Homestead, which remained a SAC base until 1968, when the big bombers moved to Robbins Air Force Base in Georgia. In 1981, the fighter wing became the 31st Tactical Training Wing and began training F-4 pilots. In the

¹⁰⁵⁶ In September 1946, the U.S. Air Force split off from the U.S. Army and became a coequal branch within the Department of Defense.

¹⁰⁵⁷ Homestead Air Reserve Base, <http://www.homestead.afrc.af.mil/library/factsheets/factsheet.asp?id=3401>; Lindsay T. Peacock, *Strategic Air Command* (London: Arms & Armour Press, 1988), 38, 69, 91; Monika Mayr, *Everglades Betrayal: The Issue That Defeated Al Gore* (Minneapolis: Two Harbors Press, 2008), 3–4; SMR, Feb. 1962.

1980s, a reserve unit, the 482nd Tactical Fighter Wing, also began operating from Homestead. During this period, F-16s gradually replaced the F-4s. At its height, Homestead AFB employed 8,700 people with an annual payroll of \$152 million. Estimated to pump about \$430 million into the local economy, the base was a driver of South Dade's prosperity. The base remained a training facility until August 1992, when it took a direct hit from Hurricane Andrew.¹⁰⁵⁸

The park and the Air Force base cooperated in a number of areas. Airmen and reservists frequently were available to assist with park projects. In March 1965, demolition experts from the base helped park staff to blast emergency alligator holes during a prolonged drought. From 1973 through 1981, members of the 915th Civil Engineering Squadron from the base conducted exercises in the park on weekends. Groups ranging in size from 10 to 60 servicemen built tent platforms, repaired boardwalks, and did electrical work. In April 1981, the 915th left Homestead Air Force Base, and another reserve unit, the 482nd Fighter Wing, moved in. Both units have made substantial contributions to park operations over the years. In the 1950s and 1960s, the Air Force stored equipment and supplies for an emergency hospital at park headquarters and the Pine Island utility area. In the 1950s, park rangers were active participants in the Ground Observer Corps program. Rangers scanned the skies for approaching enemy aircraft, participating in drills and tests of the system.¹⁰⁵⁹

There were some less-than-ideal aspects of the base's proximity. On March 13, 1958, a B-47 crashed just east of Pine Island, killing the four crewmen aboard. If the plane was carrying nuclear bombs, presumably they were recovered. In 1967, the park was contacting the Air Force about removing some target darts that had been dropped in the park. Overflights by military planes were by far the most vexing and persistent issue for park managers. These flights disturbed wildlife, degraded the visitor experience, and were incompatible with wilderness values.¹⁰⁶⁰

¹⁰⁵⁸ Homestead Air Reserve Base website; U.S. Air Force, *Final Supplemental Environmental Impact Statement, Disposal of Portions of Homestead Air Force Base* (Washington, DC: Air Force, Dec. 2000), 8; Mayr, 3–4.

¹⁰⁵⁹ SMR, March 1965; Correspondence in Flamingo maintenance files, EVER-01814; SMR, Apr. 1965; Supt. Hamilton to RDR1, Mar. 30, 1962, NARA Ph, RG 79, 79–69–5662; Air Force Historical Research Agency website, <http://www.afhra.af.mil/factsheets/factsheet.asp?id=10057>; Steve Hach, *The Cold War in South Florida* (Atlanta: NPS, 2004), 43–44. Hach's work provides the most comprehensive account of Cold War military activity in and near the four South Florida parks.

¹⁰⁶⁰ SMR, Mar. 1958 and Apr. 1967.

Military Overflights

Overflights became a more pressing issue with the arrival of the fighter wing at Homestead in the 1960s. The F-4 can fly at twice the speed of sound, creating sonic booms. The park began contacting the Air Force in 1967 about the noise from overflights. In 1968 the superintendent wrote the Homestead commander with a strong plea to end low-level flights and avoid certain areas entirely. He provided maps of major bird nesting areas and visitor concentrations he wanted avoided. It appears that low-level flights of B-52s over the park stopped for a period. Problems, especially with the fighter jets, eventually started up again. Air Force representatives repeatedly stated that pilots had instructions never to fly below 1,000 feet over the park, but pilots seem often to have ignored this regulation. In early 1970, the park believed the Air Force had committed to move low-level training routes away from the park, but agreed-upon changes were not implemented.¹⁰⁶¹

Overflights remained an on-and-off concern until July 1987, when the park learned that the Air Force was planning a military operations area (moa) over South Florida. The preferred alternative in the environmental impact statement placed the moa entirely over Everglades National Park and Big Cypress National Preserve. Projected operations included flights as low as 100 feet at high subsonic speeds of 400 to 500 miles per hour. The Air Force had not involved the NPS in any of the preliminary planning process. Superintendent Michael Finley enlisted the aid of environmental groups, eighteen of which signed a letter of protest to the Secretary of the Air Force. In a fine turn of phrase, Finley also told the press that the plan was “tantamount to proposing roller derby in the Sistine Chapel.” The Florida cabinet also weighed in against the proposal. In November 1988, the Air Force bowed to the pressure and announced it planned the moa for an area between Lake Okeechobee and I-75 (Alligator Alley).¹⁰⁶²

From 1989 until August 1992, park staff continued to record low-level military operations over the park. A training route continued to take jets on their way to the Avon Park bombing range over parts of the park. Low-level helicopter missions using aircraft with blacked-out markings and refueling missions were observed at night. The Air Force provided little information, at one point telling park staff the observed exercises were classified. After Hurricane Andrew, Homestead AFB became a reserve installation, lessening the impact.¹⁰⁶³

¹⁰⁶¹ Background Paper, Military Overflights, Sept. 1998, EVER 56572.

¹⁰⁶² Background Paper, Military Overflights, Sept. 1998, EVER 56572; “Plan to Use Everglades for Fighter Training Opposed,” *Atlanta Journal Constitution*, Feb. 21, 1988; “State Cabinet Opposes Jet Training over Glades,” *Miami Herald*, Feb. 24, 1988; “Air Force Targets New Training Site,” *Tampa Tribune*, Nov. 2, 1988.

¹⁰⁶³ Background Paper, Military Overflights, Sept. 1998, EVER 56572; Asst. Supt. to Supt., Apr. 7, 1989, EVER 58222.

Testing Military Technology

The subtropical environment of Everglades National Park and its remoteness meant that the military and its contractors persistently wanted to test equipment there or use it as a monitoring station. Much of this work was secret and official records refer to it only elliptically or not at all. Flamingo was the site of quite a bit of activity from 1960 to 1963. Some of this involved the Army Signal Research and Development Laboratory and its contractor LORAC Services Corporation, which measured “magnetic currents” in the earth when nuclear tests were conducted in the Pacific. This involved the construction of a temporary 100-foot tower. Conductron Corporation was reported in the park in 1963 and 1964 doing a classified “study of electro-magnetic wave propagation through vegetation” under a contract with the Air Force. In 1967, the Army’s Aberdeen Proving Grounds got permission “to again conduct classified work” in the park. In the winter of 1969/70, the Massachusetts Institute of Technology completed electronics work for the Air Force on Long Pine Key “in direct support of Southeast Asia radar surveillance problems.” This required the erection of temporary towers.¹⁰⁶⁴ Park records from the 1950s and 1960s contain many tantalizing references to classified work involving many different units from all of the services. Frequently, park files do not identify the unit, but merely note that the “U.S. Army” was operating in the park. This vagueness makes tracking down particular projects in military archives extremely difficult, even when the documents have been declassified. The full extent of the Cold War-related military activities in the park will probably never be known.

Perhaps the most interesting military research use of the park during the Cold War was the creation of a replica Viet Cong village on Palma Vista Hammock to test infrared sensing technology. The U.S. in 1964 had about 25,000 soldiers in South Vietnam to support a government being attacked by Viet Cong guerrillas, who were backed by a Communist North Vietnamese government. The Air Force hoped that infrared sensors in low-flying aircraft would help them to target guerilla encampments in the jungles of Southeast Asia. The Air Force Avionics Laboratory contracted the testing to the HRB Singer Corporation, which began searching for a suitable testing location in South Florida. Singer concluded that Palma Vista Hammock had the needed vegetation cover, road access, and degree of security to conduct this classified work. The company

¹⁰⁶⁴ Acting Supt. to RDSE, Aug. 20, 1962, Supt. Joseph to RDSE, Nov. 27, 1963, Supt. Hamilton to the Director, May 16, 1963; SMR, Dec. 1966, NARA Ph, RG 79, 79-70-A-4751; Charles W. Calahane, Massachusetts Institute of Technology, to Supt. Allin, Dec. 9, 1969, EVER 22965; SMR, Apr. 1963. The military also made extensive use of Dry Tortugas National Park. For example, the Everglades superintendent noted in April 1963 that the air force had placed “a mobile communications unit on Loggerhead Key on a temporary basis.”

informed Superintendent Stanley Joseph in summer 1964 that it would seek a special use permit for the testing.¹⁰⁶⁵

The NPS initially denied the permit request, considering the proposed use contrary to park values, but the national defense argument proved too strong to resist and the work went forward in 1965. Singer constructed huts of poles and grass, foot bridges, and lean-tos and dug some earthworks and foxholes. It hired men from a local temporary-labor agency and had them simulate camp activities, including building wood and charcoal fires. Park rangers assisted the company and kept an eye on their activities. Aircraft, including DC-3s, made passes at night, flying at altitudes of 500 feet and lower. No copy of the special use permit has been located; presumably Singer was required to remove all traces of its activities at the hammock when the testing was concluded.¹⁰⁶⁶

The Cuban Revolution Reverberates in South Florida

The Cuban Revolution brought the Cold War home to many Americans and had a significant impact on Everglades National Park. An armed rebel group, led by Fidel Castro, began a campaign against the corrupt regime of Cuban dictator Fulgencio Batista in 1953. The movement's first recorded impact on the park came in March 1958, when rangers apprehended three armed Cubans along Shark Valley's seven-mile road who said they were training to overthrow Batista. Castro's group assumed power in Havana on New Year's Day, 1959. Batista's repressive regime had largely benefitted wealthy Cubans at the expense of the average citizen, and Castro at first had widespread support on the island. As Castro moved to the left, nationalizing companies and acting against the interests of U.S. companies, the U.S. government cut off its aid. Castro began to jail or kill his domestic opponents and turned increasingly to the Soviet Union for backing. The overthrow of Castro became the unacknowledged policy of the U.S. government, and South Florida and the Everglades became a staging ground for anti-Castro activity.¹⁰⁶⁷

Another early impact of the Cuban Revolution on Everglades National Park was the landing of Cuban refugees. Park staff conferred regularly with the U.S. Border Patrol on the refugee situation starting in 1960. Tens of thousands of refugees arrived in South Florida, and many started planning and training to overthrow Castro. Remote and minimally patrolled, the Everglades and Florida Bay became a hotbed of shadowy exile activity, often financed and led by the U.S. Central Intelligence Agency (CIA). Keys within the park and remote inlets were used as rendezvous points, weapon caches, and training sites. Some of this activity made its way into official park records, but it is safe

¹⁰⁶⁵ Supt. Joseph to RDSE, Sept. 2, 1964, NARA Ph, RG 79, 79-69-5662.

¹⁰⁶⁶ Supt. Joseph to RDSE, Sept. 2, 1964, NARA Ph, RG 79, 79-69-5662; Col. Edward B. Giller, USAF, to Dir. Hartzog, Nov. 11, 1964, NARA II, RG 79, NPS AF, box 584; SMR, Jan. and Oct. 1965, Feb. 1966 .

¹⁰⁶⁷ Hach, 13-16.

to assume that most of these clandestine operations were not recorded. By mid-1960, the U.S. government had in place a campaign of sabotage against the Castro government and was beginning to organize and train an invasion force of exiles. In February 1961, park rangers found eight Cubans engaged in target practice just off the Tamiami Trail in the park. They may have been an independent group or part of the CIA-supported invasion force that landed in the Bay of Pigs on Cuba's south coast on April 17, 1961. The Cuban Army was ready for the attack and all of the exiles ended up killed or captured. As security against future attacks, Castro drew closer to the Soviet Union, leading to the placement of Soviet missiles on the island and the event that became known as the Cuban Missile Crisis.¹⁰⁶⁸

The Cuban Missile Crisis and its Aftermath

Hoping to forestall future invasions following the Bay of Pigs, Castro was happy to accept a stronger Soviet military presence on the island. An American U-2 reconnaissance plane on October 14, 1962, detected the presence of Soviet intermediate-range missiles on Cuba. A threat of this magnitude so close to the mainland was unacceptable to the U.S. government. As tensions mounted, troops, planes, surface-to-air missiles, and other equipment poured into South Florida. President John F. Kennedy on October 22 announced a blockade of Cuba and ordered the Navy to stop and board any suspicious ship heading to the island. The U.S. military operated at a high level of readiness and prepared to invade Cuba if the Soviets refused to remove the missiles. SAC sent its bombers to scattered sites around the country to make them less vulnerable to attack. It also implemented an airborne alert, with B-52s carrying nuclear bombs constantly in the air. In the park, plans for an emergency evacuation of personnel were hastily drawn up. On October 25, a Soviet surface-to-air missile shot down a U-2 plane from the 4080th Strategic Reconnaissance Wing over Cuba, killing its pilot. Negotiations ended the crisis before any further escalation. By October 27, the Soviets had agreed to dismantle the Cuban missile sites in return for a U.S. pledge not to invade the island in future. The U.S. also agreed to remove from Turkey some missiles aimed at the Soviet Union, in a side deal that was kept secret from the American people for several years.¹⁰⁶⁹

The events of October 1962 had lasting effects on Everglades National Park, ranging from an increased emphasis on civil defense to the acceptance of a permanent military installation inside the park's authorized boundary. As described below, the base arose on property not yet owned by the NPS. The emergence of Cuba as a Soviet ally made South

¹⁰⁶⁸ SMR, Sept. 1960, Feb. and Nov. 1961, June 1962; Hach, 16–21.

¹⁰⁶⁹ Hach, 21–23; SMR, Oct. 1962; J. C. Hopkins and Sheldon A. Goldberg, *The Development of the Strategic Air Command, 1946–1986* (Offutt AFB, NE: USAF, 1986), 107–109. On November 26, President Kennedy visited Homestead AFB and presented the Outstanding Unit Award to the 4080th Strategic Reconnaissance Wing in recognition of its reconnaissance missions over Cuba

Florida even more of a target in the event of war, either one started by Castro on his own or as part of a coordinated eastern bloc offensive. The park prepared a “Nuclear Attack Survival Plan” that was distributed to all employees in February 1963. The plan was modeled on the park’s hurricane warning plan, with color-coded alert levels. A red alert would be declared if a nuclear bomb had fallen in the Homestead-Miami area. The plan’s authors noted helpfully, “This will be self-evident.” Flamingo was designated as an evacuation center, and four staff members would establish a checkpoint at West Lake to administer a “radiological metering test” to all seeking refuge. Among other tasks, the district ranger was directed to “set up a fishing detail who will . . . begin the catching, cleaning and refrigerating of fish to augment other food supplies.” In his cover memo, Superintendent Hamilton blandly asserted that if a nuclear attack occurred, “undoubtedly all park employees would take it in stride as each of you has done in past emergencies.”¹⁰⁷⁰

Surface-to-air missiles were an important part of the defenses of South Florida during and after the missile crisis. The area previously had not been part of the national air defense network, and the U.S. Army in October and November 1962 had to scramble to arrange temporary installations for Nike Hercules and HAWK surface-to-air missiles (SAMs). The Nike Hercules was a two-stage, solid-fuel SAM primarily targeted against bombers but with some capability against ballistic missiles. The forty-one-foot-long missiles could carry both conventional and nuclear warheads. Nike-Hercules units were widely deployed around major U.S. population centers and military bases in the 1950s and 1960s. The HAWK was a medium-range SAM mounted on wheeled or tracked vehicles, making it semi-mobile. The missiles were 16-and-one-half-feet long and carried conventional warheads. The army set up four temporary Nike sites in Dade County in fall 1962. Battery C/2/52 went in near Carol City north of Miami, and Battery D/2/52 was located in north Dade County near the Broward County line. A third battery, A/2/52, set up shop on fields hastily leased from a farmer along State Route 27 just outside the park’s main entrance. Upon its return from nuclear tests in the Pacific, Battery B/2/52 began operating near A/2/52. Headquarters for the batteries was established in Princeton, Florida. The army set up a number HAWK sites in and around Homestead Air Force Base and at Key West.¹⁰⁷¹

In early 1963, the army decided to make its South Florida missile sites permanent. To reduce costs, the military looked for sites already in federal government ownership. The park first learned of this new direction in March when rangers encountered four military officers in civilian clothes in an unmarked car in the Hole-in-the-Donut scouting locations. The army wanted to move Battery A/2/52 from its temporary location to a

¹⁰⁷⁰ Supt. to All Employees, Feb. 8, 1963, transmitting Nuclear Attack Survival Plan, NARA Ph, RG 79, 79-69-5662.

¹⁰⁷¹ Hach, 75-76.

fixed site inside the park's boundary. Superintendent Warren Hamilton quickly notified the Southeast Regional Office and the matter soon reached the highest NPS levels in Washington. The service did not want this incompatible use within the park boundary, but the U.S. Army had an ace up its sleeve. The 700 acres that the army needed were part of the 4,400 acres that had come into Farmers Home Administration ownership when the Iori Farms tomato-growing operation went bankrupt (see Chapter 6). The Defense Department threatened to block the transfer of this large tract to the NPS if it did not get the missile base. The Senate Committee on Interior and Insular Affairs told the Departments of Interior, Agriculture, and Defense to work something out. As the DOI put it to the National Parks Association, "We felt that we could not oppose the use of part of this land for a Nike site without raising serious questions concerning the national defense and at the same time jeopardizing enactment of legislation needed to acquire the greater portion for the park." The NPS ended up acquiescing to the issuance of a special use permit to the army by the Farmers Home Administration, to which it became a party when the administration conveyed the land to the NPS. At this same period, the army decided to permanently locate Battery B/2/52 on Key Largo, at a site designated as HM-40. The site became operational in 1965 and was decommissioned in June 1979. Most of that site is now part of the Crocodile Lake National Wildlife Refuge.¹⁰⁷²

Nike Base HM-69

The U.S. Army designated the new Nike Hercules installation in the park HM-69 (Homestead-Miami 69). Each such installation consisted of a launch area and a control area, ideally located about one mile from each other. The launch area contained missile shelter buildings, a missile assembly and test building, a ready building, kennels for guard dogs, and various utility and storage buildings. The high water table in the Everglades meant that missiles could not be kept underground as they were elsewhere but had to be stored in above-ground shelters. Each of the three shelters at HM-69 was surrounded by a U-shaped earthen berm to contain blast effects. The control area had an administration/barracks building, a general warehouse, generator building, towers and antennae for radars, and miscellaneous support buildings (figure 22-2, HM-69 radars). HM-69 lay toward the end of Line Pine Key Road (now Research Road). By April 1964, the Army Corps of Engineers had begun construction of the site. Limestone for building pads was obtained on-site, leaving borrow pits that filled with water and became ponds. Park staff met frequently with army personnel and contractors to coordinate construction activity and keep damage to a minimum. Florida Power & Light crews were in the park

¹⁰⁷² Supt. to RDSE, Mar. 22, 1963, Acting Asst. Dir. Jackson E. Price to Howard Bertsch, Farmers Home Administration, Apr. 8, 1964, Asst. SOI to Mr. and Mrs. David R. Rock, Aug. 3, 1964, NARA Ph, RG 79, 79-69-662; Acting Asst. Dir. Thomas F. Flynn Jr. to Anthony Wayne Smith, NPA, July 21, 1964, NARA II, RG 79, NPS AF, box 1627; Hach, 57. The National Parks Association complained of the service's "meek attitude" in not more forcefully resisting the Nike base, *National Parks Magazine*, Sept. 1964, 18.

extending an above-ground power line to Long Pine Key and the missile base. During the construction period, servicemen from the temporary missile site outside the park gates helped to fight fires in the park. By July 1965, Battery A/2/52 had completed its move to the permanent base. Staff at the base typically ranged from 125 to 150 people.¹⁰⁷³



Figure 22–2, HM-69 radars

As historian Steve Hach has shown, duty at the South Florida missile bases had numerous drawbacks. Most of the sites were far from recreational opportunities, and the climate and mosquitoes could be brutal. After the initial excitement of deploying in the face of the enemy nearby in Cuba faded, tedium set in. As related in Chapter 21, park rangers had to deal with some infractions by soldiers. Other soldiers found more constructive use for their off-duty hours. Two soldiers at Battery A in the early 1970s built and launched working models of army and NASA rockets. The servicemen also assisted with numerous construction and maintenance projects in the park. When the old Iori bunkhouse across the road from the HM-69 administration building became a Youth Conservation Corps (YCC) facility in 1973, the enrollees took their meals in the army mess hall. HM-69 servicemen worked with and directed some of the YCC projects. (See Chapter 24 for more details on the YCC.)¹⁰⁷⁴

¹⁰⁷³ SMR, Apr. and Oct. 1964, May and July 1965; Drawing 160/60318A, NPS TIC.

¹⁰⁷⁴ Hach, 76–82; SMR, Aug. 1965, Dec. 1966, Jan. 1967; “Success Realized in Youth Conservation/U.S. Army at Everglades National Park,” NPS media release, Aug. 30, 1973, EVER 58222.

As the U.S. and the Soviet Union moved more and more of their nuclear arsenals to intercontinental ballistic missiles, the Nike Hercules program, focused mostly on bringing down bombers, lost its reason for existence. The South Florida bases were the last in the U.S. to be decommissioned. The army decided in 1979 to deactivate HM-69, and it removed its missiles from the base in 1980. After a couple of years of indecision, the army finally agreed in 1982 to relinquish its special use permit and proceeded to remove property from the site. Park managers were already using the missile shelters at the launch area for equipment storage during hurricane season. The park converted the administration building to offices for resource management staff in the 1980s with help from Air Force reserve units from Homestead AFB. Some smaller buildings were demolished and the borrow pit was filled in, after a number of servicemen's wrecked autos were removed from it.¹⁰⁷⁵ The presence of an active SAM base in the park for almost fifteen years was something the NPS never sought but was forced to accept. Because the 700 acres involved had already been rockplowed for agriculture, the subsequent use by the army was probably less destructive than it might have been. The park has gotten good use from the administration building (now the Daniel Beard Center). The former missile shelters continue to be used for equipment storage in hurricane season, and the base is now interpreted to the public.

The Nike site was placed on the National Register of Historic Places on July 27, 2004, at the national level of significance. On October 23rd of that year, the park held a ceremony commemorating the designation and unveiled a plaque on the wall of the Beard Center. As described in Chapter 20, the park began interpretive tours of the Nike base in January 2009. A 2011 historic structure report for the site recommended preservation as the proposed treatment for the launch area and rehabilitation for the control area.¹⁰⁷⁶

Although the Cold War is over, the hostility between the U.S. and Cuban governments has not ended as of this writing. As related in Chapter 21, small groups of refugees still occasionally leave the island and end up being left in the park. The U.S. in 1985 began broadcasting to the people of Cuba over Radio Marti, with the stated purpose of providing "a contrast to Cuban media and provid[ing] its listeners with an uncensored view of current events." The station's transmitters are housed on a blimp, known locally as Fat Albert, which is moored at Cudjoe Key. In January 1991, Fat Albert broke loose and landed in the park. Rangers helped retrieve its remains from the mangroves at Shark Point.¹⁰⁷⁷

¹⁰⁷⁵ SAR 1980–1983.

¹⁰⁷⁶ "A New Mission for a Missile Base," *Miami Herald*, Oct. 23, 2004; Wiss, Janney, Elstner Associates, Inc., *HM-69 Nike Missile Site, Everglades National Park, Florida, Historic Structure Report* (Atlanta: NPS, Oct. 2011), 4.

¹⁰⁷⁷ Tony Terry, interview by author, Jan. 18, 2012; "Crews Retrieve Transmitting Equipment Off TV Marti Blimp Stuck in Mangroves," *Miami Herald*, Jan. 26, 1991.

The Fate of Homestead Air Force Base

The Base Realignment and Closure (BRAC) Commission in 1991 recommended that Homestead AFB be closed. In August 1992, Hurricane Andrew virtually destroyed the base, adding to the argument for closure. In July 1993, President Bill Clinton sent his list of military installations to be closed, including Homestead, to Congress, which approved it.¹⁰⁷⁸ The U.S. Air Force decided to retain 900 of the base's 3,000 acres for use as an air reserve base. This left 1,632 acres available for reuse, with the understanding that other users would need to share the runway with the air reserve base. Approximately 500 acres were buffer or wetlands that could not be developed. No federal agency expressed an interest in the surplus land, but Miami-Dade County did. Under BRAC procedures, the county became the local redevelopment authority and had to come up with a community reuse plan. The county's plan called for the surplus acreage to become a regional commercial airport (commuter aviation, private jets, and cargo planes) with associated businesses. As part of the redevelopment process, the county was required to prepare an environmental impact statement (EIS) to analyze the environmental consequences of the reuse plan and propose mitigation measures. In part because the Clinton administration had promised rapid action on making the base available for alternate uses, the EIS was completed in record time. On October 26, 1994, an air force record of decision approved the transfer of 1,632 acres to Miami-Dade County for use as a regional airport and associated activities.¹⁰⁷⁹

A commercial airport at Homestead clearly had serious potential impacts on Biscayne and Everglades National Parks. The NPS had been minimally consulted as the community reuse plan was developed, and it was soon apparent that the EIS had not adequately examined many questions, including groundwater runoff into Biscayne Bay and noise pollution from some 200,000 flights per year. Everglades managers were particularly concerned about the effects of jet noise on wildlife and visitors in a park that was overwhelmingly wilderness. In addition, the plan had been developed without public involvement and seemed to favor business owners closely tied to county politicians. In July 1994, the Metro-Dade Commission gave a right of first refusal on the base redevelopment to Homestead Air Base Developers, Inc. (HABDI), without competitive bidding. Several HABDI principals were leaders of the Latin Builders Association, which for years had made campaign contributions to Metro-Dade Commission members, notably Miami Mayor Alex Penelas. HABDI unveiled its plans for

¹⁰⁷⁸ The Base Realignment and Closure (BRAC) process was developed in the late 1980s to get around some of the intense political fights that typically accompany the decommissioning of military bases. A BRAC Commission was created that periodically comes up with a list of bases to be closed. The list then goes to the president. If the president approves the list, it is sent to Congress. Congress cannot tinker with the list and must either accept it in toto or reject it.

¹⁰⁷⁹ Mayr, 14–16.

the site in November 1994; they were much more extensive than previously revealed and included construction of a second runway.¹⁰⁸⁰

The Biscayne, Everglades, and Big Cypress superintendents, national environmental groups, and many local residents demanded a more thorough examination of the environmental impacts of the proposed commercial airport. In fall 1996, Everglades Superintendent Richard Ring briefed Assistant Secretary of the Interior George Frampton about the threats to the South Florida parks. Politically, the issue was a delicate one. The county commission and important Latin business leaders promised that the commercial airport would bring thousands of jobs to South Dade County. Cuban Americans who supported business and jobs were an important voting group but so were environmentally oriented voters. Although there was considerable concern in the DOI and the EPA over the redevelopment plan, at this point it appeared to have support from the White House. It also had the strong backing of Senator Bob Graham and the Florida cabinet. At the January 1997 meeting of the Everglades Coalition, Katie McGinty, chair of the federal Council on Environmental Quality, announced that a supplemental environmental impact statement (SEIS) would be prepared. This first SEIS was limited in scope and recommended that a second SEIS, fully examining the impacts of a commercial airport, be prepared. The secretary of the U.S. Air Force signed a record of decision in February 1998 that required the second EIS.¹⁰⁸¹

The U.S. Air Force and the Federal Aviation Agency (FAA) were the lead agencies on the second SEIS, while the NPS, the Fish and Wildlife Service, and the EPA were cooperating agencies. Representing the NPS on the SEIS team were Nat Wood from WASO; William Schmidt, NPS expert on noise impacts; Karen Ferro, management assistant at Everglades; Wendy O'Sullivan and Pat Lynch, chief, natural resources and management assistant, respectively, from Biscayne National Park. William Leary and Don Jodrey from DOI also participated. Team meetings were often acrimonious, with FAA representative Ralph Thompson II at times "radiat[ing] contempt" for Bill Schmidt. The FAA refused to consider any modifications to its methods for noise analysis. Ferro reported to her superintendent, "I am concerned that this whole process gives the determination of impacts, including those on parklands, to the FAA. . . . [O]ur methodology is dismissed out of hand." The team produced four alternatives: a regional airport (the Dade/HABDI plan), a commercial spaceport, a wetlands project with an aquarium, and an ecologically sensitive resort complex. Although the SEIS concluded that the regional airport would have greater environmental impacts than any of the other alternatives, it concluded that the proposed alternative of a regional airport would have no significant impact on Everglades and Biscayne National Parks.¹⁰⁸²

¹⁰⁸⁰ Supt., Biscayne National Park, to RDSE, Sept. 12, 1994, EVER 56572; "Air Base's Hand-Over Is Delayed, Environmental Concerns Cited," *Miami Herald*, Jan. 17, 1997; Mayr, 17–26.

¹⁰⁸¹ Nathaniel P. Reed to Paul Tudor Jones, June 5, 1997, NPR papers; "First Phase Approved for Homestead Airport," *Miami Herald*, Mar. 25, 1998; Mayr, 55–62.

¹⁰⁸² Mayr, 81–106, quotes at 83 and 90.

Most environmentalists expressed outrage at the SEIS's conclusions. More importantly, both Secretary Babbitt and EPA administrator Carol Browner publically opposed the regional commercial airport. Normally, a disagreement between the Departments of Defense and Interior would be decided in the White House, but 2000 was an election year. The airport controversy presented a dilemma for Vice President Al Gore, who was running for president, in part on his record as an environmentalist. Florida was an important swing state in his contest with Texas Governor George W. Bush. Had the second SEIS come out against the regional airport, Gore would have had some political cover. As it was, he felt that any stance he took would alienate a key Florida constituency: Cuban Americans if he opposed Mayor Penelas's airport plan and the environmentally conscious if he supported it. Gore took the classic politician's course: he waffled. In advance of Florida's Democratic presidential primary in March 2000, Gore would only say, "I would urge the continued discussion of how a balanced solution can be found that can help the community without hurting the environment." In the words of *Miami Herald* columnist Carl Hiassen, "the environmental vice president has elected to wimp out." Gore remained noncommittal on the issue through the general election, providing an opening for Green Party candidate Ralph Nader. Joe Browder, whose role in the fight against the Big Cypress Jetport is covered in Chapter 9, was among those who explained to Nader how he could use the redevelopment issue in his campaign. At rallies in Florida, Nader blasted Gore on the airport, specifically mentioning the consequences for the national parks. Bush ended up winning Florida by 537 votes. We will never know how many of Nader's 97,488 Florida votes would have gone to Gore had he taken a different airport stance.¹⁰⁸³

In January 2001, after the U.S. Supreme Court had stopped the Florida recount and assured the election of George Bush, the Clinton administration announced a decision. As a result of negotiations between SOI Babbitt and Secretary of the Air Force Whitten Peters, the U.S. Air Force produced a record of decision that conveyed the surplus acreage to Miami-Dade County for a mixed-use development that excluded an airport. A key statement was: "The Air Force will not allow the environmental impacts of a commercial airport in this unique location when other viable alternatives for economic development and jobs exist." Miami-Dade County and HABDI took legal action against the decision, but the county dropped out as a plaintiff in December 2001 and the case was dismissed in March 2006.¹⁰⁸⁴ A fourteen-year fight thus came to an end with a result that seemed like the obvious solution to many all along.

¹⁰⁸³ Carl Hiassen, "Green Al's Turning a Pale Shade of Yellow: A Veep Wimp-Out on the Airport Flap," *Miami Herald*, Feb. 27, 2000; "Nader Finds Allies in Fired-Up Crowd," *Miami Herald*, Nov. 5, 2000; Mayr, 102–11, 129–31; Atlas of U.S. Presidential Elections,

<http://uselectionatlas.org/RESULTS/state.php?year=2000&fips=12&f=0&off=0&elect=0>; "Park Official Dislikes Homestead Airport Plan," *Miami Herald*, Dec. 31, 1999; Joe Browder, interview by Nancy Russell, Dec. 7, 2007.

¹⁰⁸⁴ Second Supplemental Record of Decision, Disposal of Portions of Former Homestead AFB, Jan. 15, 2001, EVER 56572; "U.S. Bans Airport Near Everglades," *New York Times*, Jan. 17, 2001; "Miami-Dade Abandons Airport Plan," *Miami Herald*, Dec. 6, 2001; Mayr, 137–42.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 23:
Concessions and Special Park Uses

Chapter 23: Concessions and Special Park Uses

Concession operations have historically played a major role in the program of visitor activities at Everglades National Park. Through the early 1970s, if not later, the responsibility for soliciting and issuing park concession contracts seems to have resided in the regional office. The park had a concessions specialist, George Frederick, on board from 1984 to 1995. The position of chief, concessions management, has existed in the park since 1997, at the latest. This position has responsibility for concession operations at Everglades and Dry Tortugas National Parks.

A large concession operation did business at Flamingo from 1957 until 2005 when two hurricanes drastically curtailed it. A concessioner has operated the trams at Shark Valley since 1982. Interpretive boat tours at Everglades City have been handled by the same concessioner since 1959. The Shark Valley and Everglades City concession activities seem likely to continue to operate much as they have in the past. As of this writing, the park is moving toward finding a concessioner to handle visitor services at Flamingo. Activities that are not ongoing or do not require a land base in the park are currently handled under special use permits or commercial use authorizations. Special use permits cover uses that primarily benefit an individual or group rather than the public at large. Examples are weddings, bike or hiking club outings, and commercial filming. Commercial use authorizations cover for-profit operations based outside of the park that operate within the park. At Everglades, these include charter fishing boat operators and canoe rental outfits. Scientific research and collecting permits, formerly called collecting permits, cover outside scientific researchers working in the park. In the park's early decades, special use permits also were granted for the testing of military-related technologies (see Chapter 22).

Early Concession Operations

Following park establishment in 1947, Superintendent Beard referred to the efforts of Lloyd House and others at Flamingo to provide food and rooms to visitors as “wildcat” concessions. These operations had no official sanction from the government, and the NPS believed they reflected poorly on the service. It moved quickly to buy out all of the Flamingo residents and end these efforts. The NPS granted a concession to National Park Concessions Inc., which had previous experience in a number of national parks, to sell food, gasoline, and other necessities at Coot Bay beginning in December 1950. The firm lost money on this operation and was more than glad to turn it over in 1955 to the Everglades Park Company when the latter was the successful bidder on the Flamingo concession (see below). As of winter 1951/52, Willard M. Fletcher and Gordon H. Needham had separate concession contracts to take visitors on sightseeing boats from Coot Bay (figure 23–1 Coot Bay concessions, ca. 1949). The park extended several other

short-term special use permits for bait and charter boat operators at Coot Bay in the early years before the Flamingo visitor use area was opened.¹⁰⁸⁵



Figure 23–1 Coot Bay concessions, ca. 1949

Flamingo Concession

As described in Chapter 7, the NPS decided early on to concentrate many visitor services at Flamingo. The service awarded a twenty-year concession contract for operations there to Everglades Park Company (EPC). A group of Miami business owners led by Robert Knight formed this company specifically to bid on the Flamingo contract. The contract, which covered lodging, a restaurant, a gift shop, marina operations, boat rentals, interpretive boat tours, and a gas station, went into effect January 1, 1956. Assistant Superintendent George Fry described the Knight group as being “green in the concession business,” but he and Superintendent Beard believed they were motivated and willing to learn how to run a successful operation. Most of the marina functions at Flamingo were up and running in March 1957, with the lodge and visitor center opening in

¹⁰⁸⁵ SMR, May 1949, Dec. 1950, Feb. and June 1952; E. V. Buschman to Asst. RDR1 Daniel Tobin, Feb. 4, 1953, NARA Ph, RG 79, 79–62-A-305; George B. Hartzog, Acting Chief, Concessions Management, to Carroll E. Shoop, Sept. 11, 1952, NARA Ph, RG 79, 79–62-A-420 .

December.¹⁰⁸⁶ From December 1968 to January 1970, in a period when the Nixon administration was encouraging private operation of public facilities, the EPC operated the Flamingo and Long Pine Key campgrounds. After this brief experiment, the NPS again became the operator of the campgrounds. That is still the case as of this writing, but current planning calls for both campgrounds to be part of the next concession contract that is advertised (see Chapter 26 for ongoing park planning).¹⁰⁸⁷

The EPC maintained a good business renting small boats to fishermen and selling gasoline and other supplies to private boat owners who put in at Flamingo. The firm, however, experienced difficulties with its labor-intensive lodging and food service operations from the very beginning (figure 23–2, coffee shop at Flamingo). Everyone understood that it would be a highly seasonal operation; the motel was expected to be full in January and half empty in August. Attracting and retaining a competent staff was complicated by the facility’s location fifty miles from the nearest towns (Homestead and Florida City) at the end of a dead-end road. South Florida had long been a prime tourist destination, and job opportunities for hospitality workers were plentiful. If a waiter was working at Flamingo rather than on Miami Beach, the reason did not always bear looking into. As early as March 1958, Superintendent Beard was reporting that the EPC was experiencing heavy employee turnover. The discovery of several “hardened criminals” among the staff later in the year led to a requirement that all incoming employees be fingerprinted. The EPC also found it difficult to recruit and retain competent managers for its remote operation. Additionally, the NPS may have overestimated what visitors would want at Flamingo; a snack shop or cafeteria might have been more successful than a full-service, sit-down restaurant. All of these factors resulted in persistent losses for the EPC, including a loss of \$58,000 in 1958 and \$88,000 in 1962.¹⁰⁸⁸

¹⁰⁸⁶ Knight’s other partners were his brother-in-law George A. Pegram, A. M. Tyler, W. T. Rose, and Alan B. Kessler. The inaugural motel rates were \$12 for first floor rooms and \$14 for second floor rooms. Supt. Beard to Dir., Dec. 1, 1955, NARA Ph, RG 79, 79–67-A-1022, box 69; Acting Dir. Allen to Asst. SOI Lewis, NARA Ph, RG 79, Nov. 22, 1954, NARA Ph, RG 79, 79–62–1-420; Supt. Beard to park staff, Feb. 27, 1957, NARA Ph, RG 79, 79–68-A-2955; George Fry, “George Fry the Legend,” 140, George Fry papers, University of Tennessee Knoxville, Special Collections, MS 2056.

¹⁰⁸⁷ “Concessioner to Operate Campgrounds at Everglades National Park,” NPS media release, Dec. 22, 1968, HFC; “U.S. Park Service to Run All Everglades Campgrounds,” unsourced newspaper clipping, Jan. 2, 1970, Miami Public Library clipping file; William Gordon, personal communication, Aug. 14, 2013.

¹⁰⁸⁸ SMR, Mar. and Sept. 1958; Everglades Park Company to Dir Wirth, May 25, 1959, NARA Ph, RG 79, 79–68-A-2955, box 44; Everglades Park Company, Financial Statements, Sept. 30, 1962, NARA Ph, RG 79, 79–70-A-4751, box 1; Jack Stark, interview by author, July 10, 2012.



Figure 23-2, coffee shop at Flamingo

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You'll be surprised at the low rental rates.

Figure 23-3 houseboat rental brochure

For decades, renting houseboats at Flamingo has been a popular visitor activity (figure 23–3 houseboat rental brochure). In the early 1960s, the EPC began renting thirty-foot houseboats by the day or week. By the late 1970s, this concession had been turned over to the Flamingo Houseboat Corporation, owned by Tom and Sue Healy, who offered eight houseboats for rental. Each of their boats was equipped with “an alcohol stove, ice box, pots and pans, utensils, dinnerware, linen and towels.” The Flamingo Houseboat Corporation filed for bankruptcy protection in July 1982 and ended its houseboat rental operation in 1983. The Flamingo concessioner at that time, Everglades Park Catering Company, subsequently took over the houseboat operation. Houseboat rentals continued under this company and its successor corporations through December 2008. Everglades National Park Boat Tours, Inc. then took over the Flamingo concession and began renting two houseboats. The prospectus for the Flamingo concession released by the NPS in early 2013 included houseboat rentals.¹⁰⁸⁹

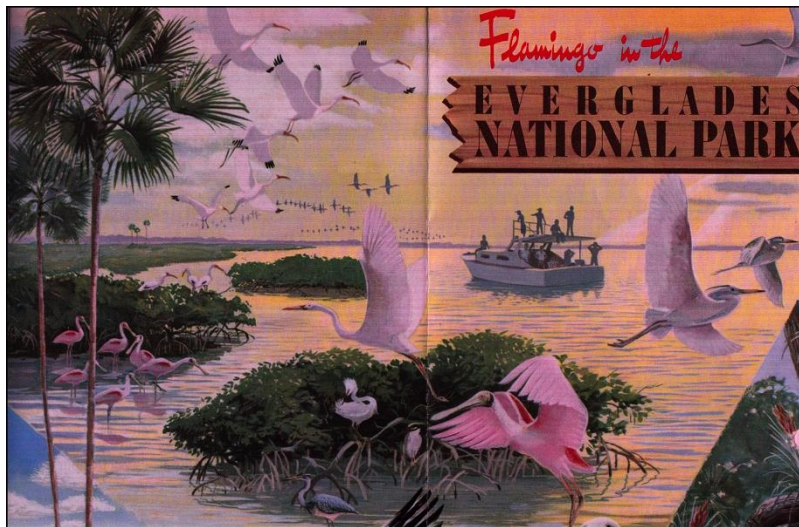


Figure 23–4, Everglades Park Company Flamingo brochure

The EPC made several changes in the mid-1960s in hopes of increasing its profitability (figure 23–4, Everglades Park Company Flamingo brochure). It expanded the coffee shop by forty-five seats, constructed sixty additional motel rooms, and added twenty-four housekeeping cottages. These changes seem to have been beneficial, but increases in gas prices in the 1970s caused a decrease in the usage of the Flamingo facilities, and the operation again struggled, with the park reporting an increase in visitor complaints. Such complaints seem to have been a perennial feature. One Everglades superintendent has described Flamingo as the “worst concession operation in the history of the National Park Service.” A company promotional ploy, the selling of “deeds” to one square foot of park

¹⁰⁸⁹ “Houseboat Tour Delightfully Different,” *Chicago Tribune*, Jan. 27, 1963; “Houseboats Great Way to See Real Florida,” *Boca Raton News*, Jan. 12, 1979; SAR, 1982, 1983, 1993; William Gordon, personal communication, Aug. 26, 2013.

land, was stopped when the NPS learned of it (figure 23–5, Everglades Park Company deed). When its original twenty-year contract was coming to an end, the EPC, which had been a subsidiary of General Host Corporation since 1968, expressed no interest in bidding on a new contract. The NPS got no response to an initial concession prospectus issued in 1974. A revised prospectus drew some bidders, and in 1975, the service awarded a contract to Everglades Park Catering Company (EPCC), a subsidiary of Restaurant Associates, Inc. EPCC’s contract took effect on October 1, 1975. A 1977 analysis by a consulting firm showed that the concessioner was not making large enough profits to afford necessary facility renovations. In a bid to help the company turn a profit, the NPS in 1978 purchased all of the concessioner’s buildings for \$1.3 million.¹⁰⁹⁰ From this point, the NPS was responsible for major maintenance of the buildings while the concessioner took care of furnishings and interior finishes. The park did not believe that the \$70,000 increase it received in its maintenance budget fully covered the added costs.¹⁰⁹¹



Figure 23–5, Everglades Park Company deed

¹⁰⁹⁰ The purchased buildings were the seven units of the lodge (also called the motel), the housekeeping cottages, the restaurant, three concession-employee housing structures, a power house, the marina services building, the gas station, and the maintenance/laundry building in the maintenance compound. Building and Structures Inventory Analysis, 1964, EVER-00994; Michael Jester, personal communication, Oct. 16, 2014.

¹⁰⁹¹ SMR, Jan., Mar., Oct. 1964; Jack Stark, interview by author, July 10, 2012; NPS Dir. to J. Alan Cross Jr., Everglades National Park Company, Mar. 11, 1966, EVER 22965; Centaur Management Consultants, Inc., “Analysis of Flamingo Concession Operation in Everglades National Park,” HFC; SAR, 1972 through 1975, 1978; William Fay, interview by Nancy Russell, Aug. 6, 2012.

In June 1984, EPCC sold its Flamingo concession contract to T. W. Services of Chicago. The firm changed its name to T. W. Recreational Services as of June 1987. Then, in 1995, Amfac Corporation purchased T. W. Recreational Services. Amfac in 2002 changed its name to Xanterra Parks and Resorts Corporation. Throughout these ownership changes, the Flamingo concession continued to experience ups and downs. For example, the park did not receive enough in concessioner franchise fees or in its maintenance budget to make needed upgrades at Flamingo. The facilities, built in the 1950s and 1960s, increasingly showed signs of wear and tear. In 1990, the concessioner constructed additional employee housing, freeing up rooms in the lodge for public rental. Hurricane Andrew in 1992 depressed tourism, as did a series of killings of foreign tourists in scattered areas of South Florida outside the park in 1992 and 1993. The company reported a 25 percent decline in lodge stays. A decade later, Xanterra Corporation reported losses of \$45,000 in 2003 and \$24,000 in 2004. A 2004 analysis by PricewaterhouseCoopers indicated that Flamingo could not be profitable in its existing configuration.¹⁰⁹²

The Flamingo concession, then, was already in difficulty when Hurricanes Katrina and Wilma in 2005 made the motel, restaurant, and housekeeping cabins unusable.¹⁰⁹³ Given the age of the structures and the prohibitive cost of reconstruction to contemporary standards, the NPS decided to demolish them. After repairs to some marina structures, Xanterra Corporation continued to operate the marina store, sightseeing boat tours, and canoe, kayak, and skiff rentals. Xanterra wanted to end its operations at Flamingo, and the park put out a request for proposals for a short-term (three-year) concession contract for Flamingo. There was no response, and the NPS ended up offering financial and other incentives to Xanterra to convince it to continue to operate at Flamingo through December 31, 2008.¹⁰⁹⁴ The Everglades City concession was then operating on a year-to-year renewal basis, and the park decided to combine the Everglades City and Flamingo concession operations into a single request for proposals. Everglades City had consistently been a profitable concession operation, and the thought was that firms might be willing to take on the more doubtful Flamingo job if Everglades City was part of the deal. The NPS offered a package with a ten-year term for Everglades City and five years for Flamingo. In 2008, the service awarded the concession to Everglades National Park Boat Tours, Inc., owned by Sammy Hamilton Jr. The Hamilton family has been operating the Everglades City concession since 1959 (see below). At this writing, sightseeing boat

¹⁰⁹² SAR, 1984, 1985, 1990, 1991, 1993; Summary of Concession Operations, Everglades and Dry Tortugas National Parks, EVER 22965; PricewaterhouseCoopers to Henry Benedetti, Chief, Concessions, NPS SERO, Sept. 28, 2004, EVER 22965.

¹⁰⁹³ Hurricane Donna in September 1960 shut down most of the Flamingo concession operations for three months. See Chapter 16.

¹⁰⁹⁴ Because Xanterra had profitable concessions at several large western parks and wanted to maintain good relations with the NPS, it was willing to stay on at Flamingo longer than purely business considerations would have dictated. William Fay, interview by Nancy Russell, Aug. 6, 2012.

tours; rental of canoes, skiffs, kayaks, houseboats, and bicycles, and marina services are available at Flamingo.¹⁰⁹⁵

Public interest in the future of visitor services at Flamingo has remained strong following the demolition of the old lodge and cabin buildings. The NPS started a planning process in October 2006 to come up with a commercial services plan and environmental assessment (CSP/EA) for Flamingo. The stated goal of the CSP/EA was “to determine necessary and appropriate commercial services for the Flamingo area in accordance with all applicable laws and policies, while providing a viable long-term business opportunity for the concessioner(s) ultimately selected to operate the facilities.” A host of considerations, many of them unknown or of little importance when the service first developed Flamingo in the 1950s, came into play in crafting the CSP/EA. The effects of development on the fragile coastal environment are much better understood today than fifty years ago, as are the often costly methods of protecting structures from winds and hurricane storm surge. Planning for the long-range impacts of sea level rise is a particular challenge in a coastal environment, such as Flamingo.¹⁰⁹⁶

As described in Chapter 7, the park in 2010 prepared a Flamingo Master Plan and Design Program based on the CSP/EA. Planning for Flamingo was later revised and scaled back because of concerns over long-term sustainability and anticipated funding limitations. Planning for the redevelopment of Flamingo calls for a significantly smaller footprint and the restoration of natural conditions on some fifty acres that were previously developed or landscaped. Redevelopment will also be compatible with the existing Mission 66 historic landscape, and the historic visitor center and gas station will be retained. Because of the high cost of construction at Flamingo and the current challenging budgetary environment, the redevelopment of Flamingo will proceed in stages.¹⁰⁹⁷

In January 2013, the NPS released a prospectus for commercial visitor services at Flamingo. The service solicited proposals for the provision of “lodging, camping, tour boat, canoe/kayak rentals, skiff rentals, houseboat rentals, bicycle rentals, boat slip rentals, food and beverage, retail, boat transfer service, and other visitor services.” The term of the proposed contract was set at ten years, with a franchise fee of 4.7 percent. This prospectus failed to elicit any proposals. The NPS revised the prospectus based on feedback it got on the unsuccessful 2013 offering. With the approval of the NPS director, the contract term was extended to twenty years, and the food service function was

¹⁰⁹⁵ SAR, 2005–2009; Keith Whisenant, interview by author, May 24, 2011; “Mayor Hamilton Awarded Long-Term Contract to Run Everglades Boat Tours,” *Naples Daily News*, Jan. 3, 2009; Everglades National Park Boat Tours, <http://evergladesnationalparkboattoursflamingo.com/canoe.php>; William Gordon, personal communication, Jan. 23, 2013; William Fay, interview by Nancy Russell, Aug. 6, 2012.

¹⁰⁹⁶ NPS, *Flamingo Commercial Services Plan Finding of No Significant Impact*, July 2008,

http://www.nps.gov/ever/parkmgmt/upload/FlamingoCSP_FONSI_08July23.pdf.

¹⁰⁹⁷ NPS, *Flamingo Commercial Services Plan*, July 2008.

changed from a small-scale, seasonal operation to a full-service restaurant. Bidders will be required to include twenty-four cottages and twenty ecotents in proposals; they will have the flexibility to propose up to an additional twenty cottages and twenty ecotents as part of a first or subsequent building phase. In September 2014, the NPS issued a presolicitation notice for the Flamingo concession, alerting interested parties that it would soon be opening the formal bidding process.¹⁰⁹⁸

Everglades City

In 1959, Sammy Hamilton Sr., of a family that had been in Everglades City since at least 1920, received the contract to operate sightseeing cruises from Everglades City. Later his son, Sammy Hamilton Jr., took over the firm. Until the NPS built a small visitor center in the winter of 1966/67, the boats left from a private dock. Once the visitor center went up, Hamilton expanded operations to include a gift and snack shop and boat rentals. In 1984, Sammy Hamilton Jr. and some other family members incorporated under the name of Everglades National Park Boat Tours, Inc. (ENPBT). The younger Hamilton developed a measure of political renown and has served multiple terms as mayor of Everglades City. ENPBT has generally operated successfully. From time to time, the service has raised concerns over the condition of boats and the quality of the interpretation provided by employees. By 1990, Hamilton was operating four vessels, the *Panther I*, *Panther II*, *Manatee I*, and *Manatee II*, and carrying about 50,000 passengers annually (figure 23–6, concessioner boat at Everglades City).¹⁰⁹⁹



Figure 23–6, concessioner boat at Everglades City

¹⁰⁹⁸ “Everglades National Park Requesting Proposals for Commercial Visitor Services at Flamingo,” NPS media release, Jan. 29, 2013; Fred Herling, personal communication, Aug. 22, 2013; “Request for Interest or Presolicitation for Flamingo Concession Contract, NPS media release, Sept. 3, 2014; Fred Herling, personal communication, Oct. 17, 2014.

¹⁰⁹⁹ SAR, 1984, 1988, 1990.

ENPBT's long-term contract with the NPS expired in 1991, and the firm continued to operate under repeated short-term contract extensions. In 2002, the service issued a prospectus seeking bids for a seven-year concession contract at Everglades City. By December 2002, the NPS was close to announcing an award. Then, on December 30, 2002, the *Panther I* sank in shallow water in the Ten Thousand Islands while carrying thirty-three sightseers. There were no serious injuries, but the passengers went into the water without life jackets and had to be rescued by a commercial fisherman. The Coast Guard investigated and determined that the accident was the result of previous damage to the vessel's hull that had never been reported; in fact the vessel had only been able to continue operate by the use of pumps. The Coast Guard found other violations and imposed a \$60,000 fine on ENPBT. Following this incident, the NPS in consultation with the National Transportation Safety Administration prepared a new concession prospectus, issued in 2003. ENPBT and five other firms bid on the contract, and the service announced its award to Guest Services, Inc., of Fairfax, Virginia.¹¹⁰⁰

ENPBT contested the award to Guest Services, filing suit in the Court of Federal Claims in Washington, DC. While the case was pending, the NPS rescinded the award to Guest Services, put the bidding process on hold, and allowed ENPBT to continue operating on yet another contract extension. The service ended up having to reimburse Guest Services for costs incurred. The firm was disappointed over the service's decisions but muted its criticism because it had NPS contracts in other parts of the country that it did not want to jeopardize. ENPBT's lawsuit was dismissed, without prejudice, on June 14, 2005. The NPS waited a couple of years and then issued a new prospectus. Sammy Hamilton and the other ENPBT investors were eager to hold on to a lucrative contract, which had grossed \$1 million in 2004. Concerned that he might lose out, Hamilton got the Collier County Commission to pass a resolution urging the NPS to give the contract to an "established local business." As related above, in early 2009, the NPS awarded a contract to ENPBT covering both Everglades City and Flamingo. At this writing, ENPBT offers guided boat tours and boat rentals and operates a gift and snack shop at Everglades City.¹¹⁰¹

¹¹⁰⁰ "Tour Boat Captain Charged in Sinking," *Miami Herald*, May 25, 2003; "Owner of Boat That Sank Blamed," *Miami Herald*, Mar. 10, 2004; Draft Concession Contract No. CC-EVER002-04, between NPS and Guest Services, Inc., Fairfax, Virginia, EVER 22965; Fred Herling, personal communication, June 26, 2014; William Fay, interview by Nancy Russell, Aug. 6, 2012.

¹¹⁰¹ "Everglades City Mayor Losing Contract with Park Service, Says He'll Wage Legal Battle," *Naples Daily News*, Apr. 28, 2001; Briefing Statement, Concession Operations, Feb. 7, 2006, EVER 22965; "Mayor Hamilton Awarded Long-Term Contract to Run Everglades Boat Tours," *Naples Daily News*, Jan. 3, 2009; Everglades National Park Boat Tours, <http://evergladesnationalparkboattoursulfcoast.com/>.

Shark Valley

As indicated in Chapter 20, Gettysburg Tours, Inc., doing business as Shark Valley Tours, Inc., took over the tram operation at Shark Valley from the park in 1982. Gettysburg Tours subsequently created a subsidiary, TRF Concession Specialists of Florida, Inc., to run the operation. High water at times stopped the trams from running, including a nineteen-month closure that ended in December 1987, when the new, elevated Shark Valley Road was opened. Located on the heavily traveled Tamiami Trail, the Shark Valley tram tours have been enduringly popular, and the park has consistently had very good relations with the concessioner. Gross revenues reached \$445,000 in 1988 and topped \$1 million by 2004. The contract with TRF has been renewed several times; a recently executed contract runs to 2021. The concessioner completed new buildings in 2003. As of this writing, the concessioner offers the tram rides, bicycle rentals, and limited retail and vending services at Shark Valley.¹¹⁰²

Commercial Airboat Operations in the East Everglades

In passing the Everglades National Park Protection and Expansion Act of 1989, Congress expressed its intent that existing commercial airboat operations in the expansion area continue. The act authorized the NPS to grant concession contracts at existing locations, subject to any regulations necessary to protect the “biological resources of the area.” At that time, airboat rides were being offered at Everglades Safari, Frog City, Glades Park, and Coopertown. Coopertown had been in operation since 1945 and bills itself as the “original airboat tour.” Some of the operators sold souvenirs, kept small zoos, and had restaurants offering local specialties like frog legs and gator tail. Under the preferred alternative in the park’s GMP, the park intends to purchase the land of the existing airboat operators and grant up to four airboat concession contracts. The park’s goal is to consolidate concession operations and confine tours to some subset of the existing airboat trails. The interpretive talks given by concessioner staff would also have to meet NPS standards.¹¹⁰³

¹¹⁰² SAR, 1988, 1990; NPS briefing statement, Feb. 7, 2006, EVER 22965; SAR, 1988, 1990; Shark Valley Tram Tours, <http://www.sharkvalleytramtours.com/about.html>; William Gordon, personal communication, Jan. 23, 2013; William Fay, interview by Nancy Russell, Aug. 6, 2012.

¹¹⁰³ Everglades National Park Protection and Expansion Act, P.L. 101–229, Dec. 13, 1989; George Frederick and Bob Panko, Preliminary Visit to East Everglades Commercial Attractions, June 24, 1991, EVER 22965; *Draft GMP*, 71–72.

Special Park Uses

In the park's early years, activities not covered under concession contracts were covered under special use permits. These were used for a wide range of activities, including guide fishing, specimen collecting for scientific purposes, carrying firearms across park land to private land, and conducting secret testing of new technologies for the American military (see Chapter 22). In 1964, the park decided to require no-fee permits from all commercial, charter, and guide fishermen. This requirement went into effect in 1965. At some point, permits for fishermen and other commercial operators who used the park but operated from land bases outside the park became known as incidental business permits. Commercial fishing in the park ended on December 31, 1985, but guide fishermen continued to ply park waters. In 1986, the park was issuing 169 permits to guides and charter boat captains. As of March 31, 1996, the park began charging \$250 for a two-year guide fishing permit. In the National Parks Omnibus Management Act of 1998, Congress created the category of commercial use authorization (CUA) to replace the incidental business permit. As of this writing, the park issues approximately 350 guide fishing permits per year and a handful of CUAs for canoe rental outfits and tour guides. The Resource and Visitor Protection Division administers the CUA programs.¹¹⁰⁴

In recent decades, the park has received more and more requests to do commercial filming and hold special events in the park. Many of the latter are requests to hold weddings, family reunions, or charity biking events (Figure 23–7, a bicycling event in the park, 2010). In 1985, for example, the park issued thirty-two filming permits. Responsibility for filming permits and special use permits has variously been lodged in the superintendent's office and the Resource and Visitor Protection Division. As of this writing, the Resource and Visitor Protection Division issues both types of permits.¹¹⁰⁵

A final category of permit is the scientific research and collecting permit, which covers scientific or scholarly investigations or educational activities by outsiders. Scientific research and collecting permits are required for natural or cultural resource surveys, inventories, monitoring, data or specimen collection, or similar research. Sociological studies and visitor surveys also require a permit. All applications for permit are reviewed for impact on park resources and compliance with applicable laws and regulations. The South Florida Natural Resource Center coordinates the research permit program.

¹¹⁰⁴ ENP Annual Aquatic Resources Report for 1968, EVER 42242, ser. IV; SAR, 1986; "Glades Fishing Guides Must Buy \$250 Permit," *Miami Herald*, Feb. 2, 1996; Bonnie Foist, interview by author, Oct. 10, 2011; P.L. 105–391, Nov. 13, 1998; SAR, 1991.

¹¹⁰⁵ SAR, 1985 and 1988; Bonnie Foist, interview by author, Oct. 10, 2011. Everglades National Park issues permits for both itself and Dry Tortugas National Park; it is not always clear from records whether totals given represent both parks or only Everglades.



Figure 23-7, a bicycling event in the park, 2010



Wilderness on the Edge:
A History of Everglades National Park

Chapter 24:
Cooperating Associations, Friends Groups, Employee Groups,
Volunteers, and the Youth Conservation Corps

Chapter 24: Cooperating Associations, Friends Groups, Employee Groups, Volunteers, and the Youth Conservation Corps

Cooperating Association

Superintendent Beard was eager to form a cooperating association for the new park. He received approval from the Washington office, and articles of incorporation for the Everglades Natural History Association were drawn up. The association held its first meeting at the Royal Palm Lodge on November 5, 1951. The group's mission was "promoting [the] historical, scientific, educational and interpretive activities of Everglades National Park." This was to be accomplished through publishing literature, acquiring material and equipment for scientific and interpretive programs, assisting with the park library, and helping to preserve objects and data important to the park. The initial annual membership fee was set at \$3.00. The first chair of the association's board of directors was park biologist Joseph C. Moore and the first executive secretary, park chief naturalist Willard Dilley. Until 1980, the park chief naturalist consistently held the executive secretary position. At that point, the by-laws were changed to specify that the position be held by someone not in the employ of the NPS.¹¹⁰⁶

Once established, the association began planning a quarterly journal devoted to the many aspects of Everglades environments. The *Florida Historical Quarterly* was adopted as a model, but the new publication was aimed at a more general audience. The first issue of *Florida Natural History* appeared in March 1953 (figure 24–1, Everglades Natural History cover). The association lost money on the quarterly and was forced to end publication with the June 1955 issue. During its brief life, the journal published more than sixty articles, including contributions by park employees Moore, Dilley, and Bill Robertson. There was also a piece on fire and Everglades, entitled, "Let 'er Burn," by Superintendent Beard. Many other contributions were from South Florida naturalists. With the journal's demise, a prime benefit of membership was lost, and the annual membership fee was reduced to \$1.00.¹¹⁰⁷

As the park opened its visitor contact points, the association handled sales of literature, film, slides, postcards, etc. Because the association's book publishing activities were an important aspect of the interpretive program, they are addressed in Chapter 20. The association began selling snacks and postcards at the Royal Palm Visitor Center in the 1950s and added a more comprehensive bookstore in 1979. Bookshops opened at the headquarters visitor center in 1961, at Everglades City in 1967, and at Shark Valley in

¹¹⁰⁶ Articles of Incorporation, ENHA, 1951, Supt. Beard to Dir., Nov. 6, 1951, Acting Dir. Tolson to ENHA, NARA Ph, RG 79, 79–58-A-360.

¹¹⁰⁷ ENHA Meeting Minutes, June 15, 1952, July 29, 1952, Feb. 27, 1956; Fourth Annual Meeting of ENHA, Feb. 27, 1956, FNPMA records.

1983. As long as the concessionaire operated a gift shop at Flamingo, the association had no role there. The park's interpretive staff from time to time believed that the concessionaire was not stocking appropriate literature and urged them to do better. In 1973, the association began selling a limited number of items at Fort Jefferson.¹¹⁰⁸

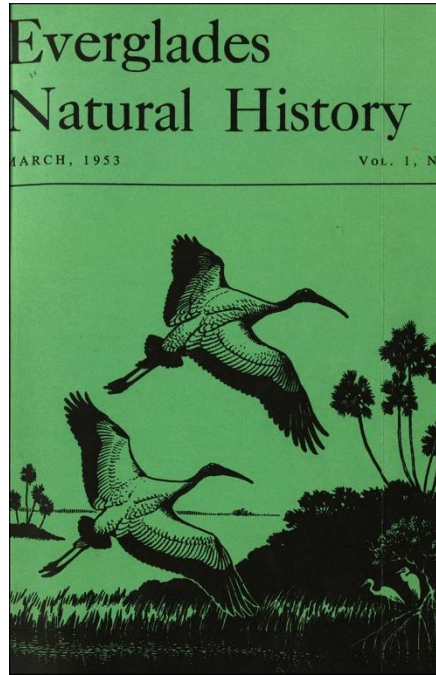


Figure 24-1, Everglades Natural History cover

Cooperating association bookstores are considered extensions of a park's interpretive program, and associations are also expected to donate a portion of their net income to the park. By 1955, the ENHA had enough sales to begin making modest contributions to park interpretation and science activities. In calculating the value of its aid, the association included both cash contributions and the value of the hours its employees devoted to visitor orientation. The annual contribution passed \$10,000 in 1960 and \$100,000 in 1990. Notably, the ENHA bought hundreds of books for the park library, at times paid the salary of a part-time park librarian, bought equipment for park scientists, and helped to defray the costs of the annual Coot Bay Christmas bird count. Cooperating with park interpreters, the association also produced numerous trail guides and site bulletins. Once the park's environmental education program was established, it produced many teacher's guides and related activity materials. From time to time, the association extended no-interest loans to other park cooperating associations around the country.¹¹⁰⁹

¹¹⁰⁸ FNPMA 1992 Annual Report; ENHA FY 1973 Annual Financial Report, FNPMA records.

¹¹⁰⁹ ENHA Meeting Minutes, Oct. 21, 1969; FNPMA Annual Report, FY 1989, FNPMA records.

Until the mid-1970s, many ENHA members were enthusiastic local park supporters and natural history buffs who enjoyed the opportunity to get together with their peers. In the early decades, a highlight for members was the annual membership meeting and fish fry held each winter at the chickee in the Pine Island residential area. Membership in the association fluctuated between 150 and 250 through the 1970s, and about three-quarters were South Florida residents. From that point, membership declined, and the association became more of a business operation geared to support the park than a group for professional and amateur natural historians. The ENHA started a monthly newsletter in January 1962, with the goal of “revitalizing the Association membership and providing regular contact with the members.” The newsletter took on the name of *The Anhinga* in May 1963 (figure 24–2, *The Anhinga* through the years). The newsletter covered park programs, association events, and “occurrences and data of natural history significance.” The ENHA tried to keep to a monthly schedule but at times got *The Anhinga* out only every other month. By 1996, the last year in which it was produced, the newsletter generally ran to four pages. As of this writing, the association newsletter has been revived in an on-line version.¹¹¹⁰

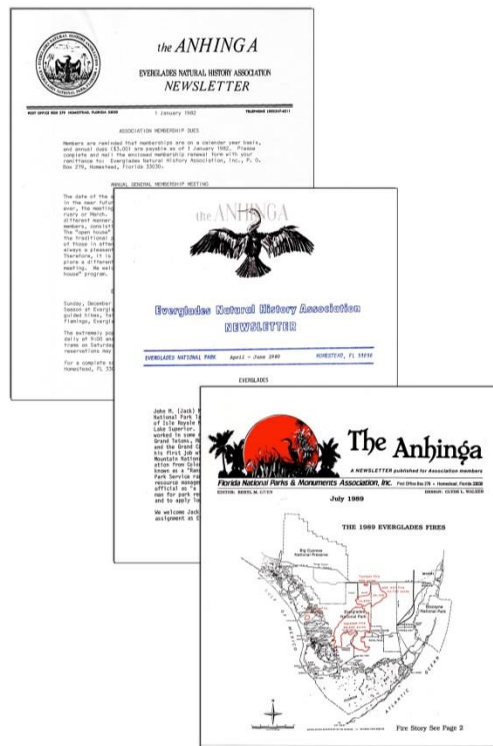


Figure 24–2, *The Anhinga* through the years

¹¹¹⁰ Annual Board of Directors Meeting Minutes, Oct. 11, 1962; ENHA newsletter, January 1962, FNPMA records; http://www.evergladesassociation.org/newsletter/December_2011_Association_Newsletter.pdf.

The ENHA was also designated as the cooperating association for both Biscayne National Park (1980) and Big Cypress National Preserve (1985). This expansion to two other units made the existing name inappropriate. Effective March 11, 1986, the association became the Florida National Parks and Monuments Association, doing business as the Everglades Association. In the winter of 1989/90, the association constructed a 4,000-square-foot warehouse and office building in the Pine Island area of the park, giving it adequate storage space for the first time in its history.¹¹¹¹

The construction of the new Ernest F. Coe Visitor Center gave the association the opportunity to plan and design a new sales area. The association invested \$82,634 to create the Everglades Discovery sales outlet just inside the entrance to the new visitor center. Doors by Art's Works of Miami (Figure 24–3, doors of the Everglades Discovery shop in Ernest F. Coe Visitor Center). Membership dues have increased over the years; at this writing the minimum category of membership runs \$35.00 a year¹¹¹²

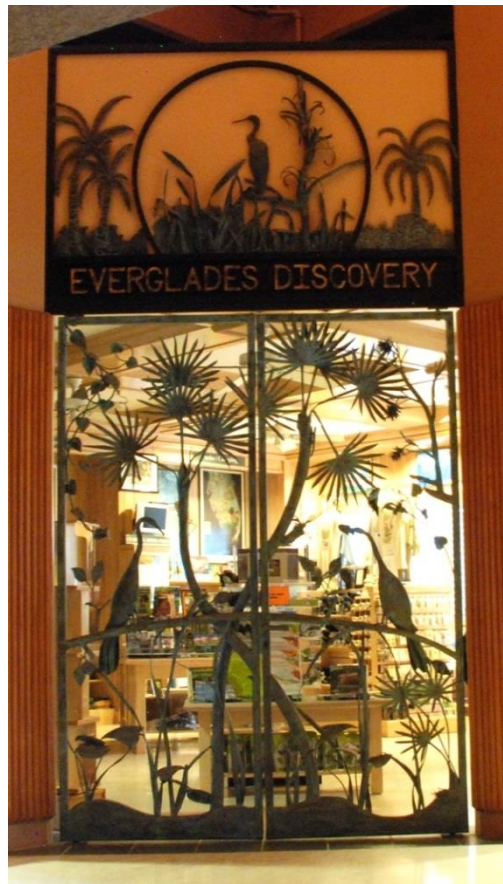


Figure 24–3, doors of the Everglades Discovery shop in Ernest F. Coe Visitor Center

¹¹¹¹ ENHA Annual Report, FY 1985, Dec. 1985, ENHA papers; FNPMA Annual Report, FY 1990, FNPMA records.

¹¹¹² FNPMA Annual Report, FY 1997, FNPMA records.

When Alan Scott became chief of interpretation in 2008, he believed that the Everglades Association (EA) had been marking time for a number of years. Scott had worked in parks where the cooperating associations had been more dynamic. These associations, for example, developed their own products, which were sold only at their outlets. Scott learned that the EA would work with a vendor to develop a product, only to see the product sold at competing retail outlets outside the park. The park found the association's director

unresponsive to suggestions for improvement. Finally, for a number of years, the EA had been unable to make financial donations to the parks it served. At Scott's initiative, the park brought in a five-member team of NPS interpretive specialists and the director of the Great Smoky Mountains Association to conduct a review of the EA's operations.¹¹¹³

The review team acknowledged the dedication of association employees and the devastating effects that the hurricanes of 2005 had on visitation and EA sales. Nevertheless, it concluded that "the association appears to be failing in its governance, its business practices, and its level of cooperation with the parks." The team provided a detailed set of recommendations in all areas of the association's operations. In the area of governance, it emphasized that the EA's board of directors, rather than its president, should set policy; that board members should have set terms; and that the president should have no role in selecting board members. Product development suggestions included making adequate investments in research and development, embracing new technology, and working closely with park staff. The EA's president rebutted every one of the team's suggestions but failed in his efforts to get the board to sign off on his response. After the review, the board began taking a more active role in operations and soon hired a new executive director.¹¹¹⁴

¹¹¹³ Scott interview; Everglades Association Review, June 8–12, 2009, FNPMA records. The members of the review team were Rose Fenell, NPS cooperating association coordinator; Terry Maddox, executive director, Great Smoky Mountains Association; Melissa English-Rias, interpretive specialist, NPS SER; Tom Richter, chief of Interpretation and Education, NPS Midwest Region; and Don Wollenhaupt, chief of interpretation and education, SER.

¹¹¹⁴ RDSE to Supts., ENP, Biscayne National Park, and Big Cypress National Preserve, July 20, 2009, EVER 22965; Alan Scott, interview by author, Oct. 6, 2011; Everglades Association Review, FNPMA records.

South Florida National Parks Trust

In the early 2000s, Everglades Superintendent Maureen Finnerty, Biscayne Superintendent Linda Canzanelli, and others saw the need for a new affiliated organization that could help raise funds for and increase public awareness of the national parks in South Florida. Park managers were especially eager to reach out to local communities, many of which historically had taken little interest in the parks. By this time, Hispanics represented three-quarters of the South Florida population, and the superintendents were eager to recruit Hispanic leaders for the board of the new organization. As superintendent of Olympic National Park in the early 1990s, Finnerty had been instrumental in establishing Washington's National Park Fund, which supported Olympic, North Cascades, and Mount Rainier National Parks. Thus, she had a model that she thought could be successfully applied in Florida.¹¹¹⁵

The South Florida National Parks Trust was formed as a not-for-profit 501(c)(3) organization, affiliated with the National Parks Foundation, in 2002. It articulated its purpose in these words:

The Trust was created to raise friends and funds to help these National Parks conserve unique ecosystems and cultural resources; provide visitors with the opportunity to experience these ecosystems; advocate responsible stewardship and community sustainability; and educate future generations of community leaders about the value of these treasures.

The group has a fifteen-member board, and Robert Chisholm, a Miami architect and urban planner, was its first chair. The trust received an initial shot of funding from \$1.8 million in penalties imposed on a cruise line that was convicted of dumping garbage and bilge water in federal waters. These funds were earmarked for specific uses and could not be used as an endowment for the trust. The trust has provided substantial support to the park's environmental education program. Other programs it has assisted with funding: episodes of the *Waterways* television program, boater education in Florida Bay, viewing scopes at Flamingo, an underwater camera at Shark Valley, and podcasts. The trust received another \$500,000 in January 2012 from penalties imposed on the Antillean Marine Shipping Corporation for polluting waters with oil and other environmental violations.¹¹¹⁶

¹¹¹⁵ Maureen Finnerty, interview by author, June 20, 2012.

¹¹¹⁶ "New Group Seeks to Help Parks," *Miami Herald*, Jan. 22, 2004; "A Buddy System for 3 Parks," *Miami Herald*, Nov. 14, 2004; undated [ca. 2004] brochure for South Florida National Parks Trust, EVER 56572; "Miami River Shipping Company Fined \$1 million for Oil Pollution," *Miami Herald*, Jan. 20, 2012; Melissa Memory, personal communication, June 26, 2013.

Employee Groups

Everglades National Park Wives Club

A park group that speaks volumes about 1950s gender roles is the Everglades National Park Wives Club. This group formed in 1959, when the park seems to have had no uniformed female employees. The group's first president was Elaine Hamilton, wife of Superintendent Warren Hamilton. The club met monthly from September to May, focusing on practical advice for families and social activities. Dues were \$1.50 per year. Often the meeting would include a presentation, such as a cooking or flower-arranging demonstration. The group produced a cookbook in 1972 entitled *Gallop[ing] Gator*. The women also did charitable work, such as making decorations for trays for the local hospital. Members occasionally arranged outings to supper clubs for dining and dancing with their husbands. When the main visitor center opened in 1961, the park began to employ women and men as uniformed park guides. The wives group changed its name to the Everglades National Park Ladies Club and welcomed female employees into its ranks. The group seems to have disbanded in 1979; the last monthly meeting minutes in the park archives are dated January 1979, when park public affairs chief Pat Tolle was the club treasurer.¹¹¹⁷

A major concern of the club was preparing families for life in Everglades National Park, a setting quite foreign to most new arrivals. Club members prepared a guide for new families around 1964. They took pains to reassure readers that hurricanes and snakes were not problems, asserting that "the average native of Florida is no more concerned with an approaching hurricane than our northern friends are of a prospective blizzard." The climate was touted as "almost perfect." The booklet had information, including photos and floor plans, of park housing, as well as information about schools, churches, taxes, and medical facilities. Newcomers were advised that good doctors were at least thirty-five miles distant and that children needed to be driven ten miles to the closest bus stop.¹¹¹⁸

Employee Association

The wives/ladies club may have served as a substitute for an employees' association. Within a decade of the club's disappearance, the Everglades Employee Association was established. It came into being on October 1, 1987, following the adoption of by-laws and the election of officers. The association's purpose was stated as "promot[ing] harmonious relations among employees" of Everglades, Fort Jefferson, and the Everglades Natural History Association. The association was to organize the annual winter holiday party and

¹¹¹⁷ EVER-01980.

¹¹¹⁸ Untitled, undated booklet, ca. 1964, EVER 60322.

retirement parties and send flowers for births, deaths, and hospitalizations. Membership meeting were to be at least quarterly. Annual dues were set at \$1.00 per grade level.¹¹¹⁹

The Everglades Employee Association has continued to operate along much the same lines as when it was founded. Membership has been extended to volunteers, and meetings are monthly. Annual dues are no longer on a sliding scale; they are \$10.00 for permanent employees, \$5.00 for seasonal and term employees, and \$2.00 for volunteers. The association handles snack sales in the headquarters and Daniel Beard Center break rooms and raises funds through bake sales, T-shirt sales, and the like. The officers of the association also administer the Supplemental Assistance for Employees (SAFE) Fund. This fund was created from donations that came in following Hurricane Andrew in 1992. It has continued to function, and it is authorized to make small loans to employees in specified situations, such as nonreceipt of a salary check or family emergency.¹¹²⁰

Volunteer Programs

The park began using donated labor from scout and military groups in the 1950s.¹¹²¹ From the 1950s through the early 1970s, Girl Scouts volunteered in the park as Everglades Ranger Aides. The scouts guided visitors on the Anhinga Trail, helped out at special public events, and did some maintenance chores, among other duties.¹¹²² Later, in the early 1970s, a formal Volunteer-in-the-Park (VIP) program was put into place. Over the decades, volunteers have worked in nearly all aspects of park operations, including interpretation, resource management, research, facility management, administration, and visitor protection. In some years, the interpretation division has accounted for one-third or more of all volunteer hours. Campground hosts, who often work most or all of a season in exchange for a camper hook-up and utilities, are a particularly valuable category of volunteer. The VIP program is coordinated by an employee of the park's interpretive division. In the mid-1970s, the park confined VIPs to "enrichment" activities and did not give them responsibilities usually handled by permanent staff. As park budgets have dwindled, this kind of restriction has been abandoned. The park does all it can to recognize VIP contributions, instituting an annual banquet for them in 1989 (Figure 24-4, VIPs painting tire stops at Chekika).¹¹²³

¹¹¹⁹ SAR, 1987; Asst. Supt. to All Employees, June 11, 1987, EVER-00994.

¹¹²⁰ By-Laws, Everglades Employee Association, September 2003, Everglades Employee Assn. records.

¹¹²¹ See Chapter 22 for more on military volunteers.

¹¹²² SMR, Dec. 1955; George Fry, 130; Acting Supt. to Dir., Apr. 10, 1970, HFC.

¹¹²³ ENP Chief of Interpretation to All Div. Chiefs, Jan. 10, 1975, EVER 22965; SAR, 1990.



Figure 24-4, VIPs painting tire stops at Chekika

Some volunteers have come back to the Everglades year after year and made substantial contributions to park operations. Donna and John Buckley are an outstanding example. The Buckleys began coming to the park in the mid-1970s, bringing groups of students from Michigan for guided canoe expeditions in the park. After ten years, they decided they wanted to spend their winters in the park as volunteers. They bought a pontoon boat and drove it down to the Everglades in late 1986. At first, park managers had indistinct notions about how to use the Buckleys and merely asked them to keep an eye on the Cane Patch backcountry campsite and surrounding areas. Over the course of more than twenty-five winters, the couple has become an invaluable presence on the Gulf Coast side of the park. The Buckleys have rescued numerous lost or stranded boaters, kept waterways open by clearing vegetation, monitored natural resources, and advised and educated backcountry users, preventing them from getting into difficulty. They have also played a significant role in manatee conservation. The state of Florida attempts to do a necropsy on every dead manatee. When the Buckleys find a manatee carcass, they tie it down, call it in, and do what is needed to get a wildlife biologist to the site to perform a necropsy.¹¹²⁴

The number of volunteers and their contributed hours have risen dramatically over time. In 1973, twenty-five volunteers contributed 2,100 hours. By 1983, 156 volunteers gave 11,056 hours. After hitting a high of 235 volunteers and 35,216 hours in 1992, the program declined in the late 1990s. Possibly this represented some fatigue experienced by park staff and volunteers following the intense labor and stress involved in recovering from Hurricane Andrew in 1993 and 1994. By the 2000s, the program was again expanding, reaching 1,675 volunteers and 65,326 hours in 2012 (Figure 24-5, a VIP preparing to apply herbicide to an Australian pine, January 2013).¹¹²⁵

¹¹²⁴ Donna and John Buckley, interview with Nancy Russell and Alan Scott, Mar. 19, 2011.

¹¹²⁵ Personal communication, Kevin R. Bowles-Mohr, June 26, 2013.



Figure 24–5, a VIP preparing to apply herbicide to an Australian pine, January 2013

Youth Conservation Corps

In 1970, Congress established the Youth Conservation Corps (YCC) to provide summer jobs for young people aged sixteen to eighteen doing conservation work on federal lands. The program was loosely modeled on the Civilian Conservation Corps of the New Deal although on a vastly smaller scale. The program’s goal was to accomplish needed conservation work in national parks and forests while providing job training, especially to disadvantaged youths. Everglades National Park set up a YCC camp for thirty teens in the old Iori Farms bunkhouse in the Hole-in-the Donut in summer 1973. The park was able to handle fifty enrollees the following summer. With the conversion of the Iori bunkhouse for use by the South Florida Research Center in 1977, the Everglades no longer had lodging for YCC members, and the program at Everglades ended. Shortly after arriving as deputy superintendent in January 2002, John Benjamin revived the YCC program. From summer 2002 through summer 2005, from ten to twenty young people from surrounding communities worked eight weeks in the park. Most were involved in planting in the Hole-in-the-Donut, while others completed maintenance projects. The enrollees commuted from their homes rather than living in park housing. The park arranged various activities for enrollees, such as a slough slog and a cruise in the Ten Thousand Islands. Benjamin and other park staff saw the YCC program as a means of accomplishing needed projects while introducing young people to the NPS and its conservation mission.¹¹²⁶

¹¹²⁶ “Teen-Ager Conservation Corps for Summers Voted by House,” *New York Times*, June 16, 1970; “Youth Corps Funded,” *National Parks Magazine*, Mar. 1971; SAR, 1973, 1974, 1977; YCC notebook, Summer 2002, EVER-00886; *Waterways* episode 210, Sept. 2013; Jonathan Taylor, personal communication, Oct. 24, 2014.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 25:
Special Events

Chapter 25: Special Events

Anniversaries

Anniversaries of the park's 1947 establishment and dedication emerged over time as important park events. The 10th anniversary of the park's establishment was celebrated quietly by park staff and a few invited guests. Superintendent Beard decided against having any public celebrations in 1957 because many of the park's Mission 66 construction projects were not complete. On June 17, 1957, Everglades National Park Commission member August Burghard gave a talk before the assembled park staff, and Superintendent Beard spoke about the park's future. In April 1958, an informal reunion of the Everglades National Park Commission took place at Flamingo. More than half of the members of the 1940s version of the commission attended, including John Pennekamp, Mae Mann Jennings, Karl Bickel, and August Burghard. Ray Vinten, who had been instrumental in working out the 1940s deal with the state, and Albert Manucy came down from the Castillo de San Marcos. Other notable participants were Barron Collier Jr., Charles Brookfield of Tropical Audubon, and Will Preston of Florida Power & Light. Dan Beard had already been selected as the new superintendent at Olympic National Park so it was an occasion for commission members and friends to say good-bye to the Beards.¹¹²⁷

Celebration of the anniversary of the park's dedication became an annual event with the 20th anniversary in December 1967. Secretary of the Interior Stuart Udall was expected to be the keynote speaker but was unable to attend. Assistant Secretary for Fish, Wildlife and Parks Stanley Cain spoke in his stead. Cain stressed that of all the nation's national parks, Everglades was the only one that faced "an uncertain future." The announcement of the Everglades Park Company's plans for a \$2 million expansion of its operations at Flamingo dominated the proceedings. According to Joe Browder, then a Miami television reporter, so many concession company executives were on stage with Cain and NPS Director Hartzog that Superintendent Hamilton had to sit in the audience. Two flamingos from the flock maintained at Hialeah Race Course were released at this event. This was an odd choice, considering that flamingos had not been seen in the park for many decades. According to the *Miami Herald*, the birds seemed "perplexed" as they stumbled out of their cages and scurried into the bush.¹¹²⁸

¹¹²⁷ "Tenth Anniversary of the Establishment of Everglades National Park Observed Today," NPS press release, June 17, 1957, RDR1 Elbert Cox to Dir., Oct. 25, 1957, Supt. CASA to RDR1, May 2, 1958, NARA Ph, RG 79, 79-A-661, box 22; Reunion Attendance List, Pennekamp papers, box 1.

¹¹²⁸ "Uncertain' Everglades Future Alarms U.S. Interior Aide," *Miami Herald*, Dec. 7, 1967; "Remarks of Dr. Stanley A. Cain," DOI press release, Dec. 7, 1967, HFC; Joe Browder, interview by Nancy Russell, Dec. 7, 1999. Flamingos had not visited the park for decades so it was unclear why two were released.

The park observed most anniversary years by offering free admission and scheduling some special visitor programs, generally on the weekend that fell closest to December 6. In 1972, the park celebrated “25 Years of Everglades and 100 Years of National Parks,” it being the 100th anniversary of the establishment of Yellowstone National Park. The park admission fee was waived for Saturday and Sunday, December 9 and 10, and 87,000 visitors showed up. Park patrol and fire equipment were on display at the main visitor center, where the park ladies club served free coffee and donuts. (See Chapter 24 for more on the ladies club.) One visitor noted the poignancy of remembering President’s Truman’s 1947 dedication speech while the former president lay critically ill in a Kansas City Hospital; Truman passed away on December 26, 1972.¹¹²⁹

The park’s 40th anniversary coincided with the reopening of operations at Shark Valley, and the major events took place there. Shark Valley had been closed for eighteen months while the Shark Valley Loop Road was reconstructed and raised and new facilities were erected, a \$2.7 million project. Senator Bob Graham was the keynote speaker and urged the audience to stay vigilant in protecting the park. NPS Director William Penn Mott Jr. was on hand and gave the park a pen that President Franklin Roosevelt had used to sign an executive order setting aside federal land for the park. The pen is now in the South Florida Collections Management Center. The park cooperating association, the Florida National Parks and Monuments Association, hosted the festivities and partly underwrote their cost.¹¹³⁰ In August 1991, the park marked the 75th anniversary of the creation of the National Park Service by waiving the entrance fee for a day.¹¹³¹

¹¹²⁹ “Open House Planned at Everglades Park,” *Key West Citizen*, Dec. 8, 1972; “Timeless Glades Celebrates Birthday,” *Miami Herald*, Dec. 10, 1972; SAR, 1972.

¹¹³⁰ “Shark Valley Reopens; Nature Lovers Rededicate National Park,” *Miami Herald*, Dec. 7, 1987; Annual Report 1987–1988, Florida National Parks and Monuments Association, FNPMA records.

¹¹³¹ “Everglades National Park celebrates 75th anniversary of National Park Service,” NPS media release, Aug. 15, 1991, EVER 58222.

50th Anniversary

The celebration of the park's 50th anniversary year kicked off with the dedication of the new Ernest F. Coe Visitor Center in December 1996 (see Chapter 6) and culminated in several days of festivities, December 4 through December 7, 1997. Many local groups held exhibitions, talks, and other events throughout 1997, all related to the golden anniversary. Florida International University and the Historical Museum of Miami were among the institutions that hosted photo exhibits and lecture series. Cesar Becerra, head of a Miami historical consulting firm, Echoes of South Florida, produced a special newsletter, *Everglade Magazine*. The fifty weekly issues of the newsletter, edited by Maud Dillingham, contained reprinted pieces and newly commissioned articles on the history of the Everglades and the national park. The state declared November 1997 "Everglades Awareness Month," and Florida fourth graders focused on the region in science classes. The park sponsored an essay contest for Collier County students in the 7th through 12th grades, asking for 500 words on "Why Everglades National Park is important to my future." The National Audubon Society partnered with the park to sponsor a photography contest for youngsters less than 18 years of age.¹¹³² The commemorative year culminated in the first week of December 1997 with a number of public events in the park and nearby communities and a reunion of past and current park employees (figure 25–1, invitation to 50th anniversary).



Figure 25–1, invitation to 50th anniversary

¹¹³² "Everglades: Fifty Year Anniversary," *Visitor's Guide to National Parks and Preserves of South Florida*, Summer 1997; "Photo Exhibit Marks Everglades' Anniversary," *Miami Herald*, Dec. 5, 1996; "Everglades Evangelist on Eve of Park's 50th Year," *Miami Herald*, Oct. 7, 1996; "Here's a Contest That's for the Birds," *Miami Herald*, July 20, 1997; Supt. Ring to Principal, Barron Collier High School, Sept. 16, 1997, EVER-01523.

The public events began with a roundtable discussion Friday morning featuring six former superintendents at the Keys Gate Golf and Tennis Club in Homestead. In order of their service, they were Joe Brown, Jack E. Stark, John M. Good, John M. Morehead, Michael V. Finley, and Robert S. Chandler. Incumbent superintendent Richard Ring moderated. Most of the superintendents stressed the complexity of the Everglades ecosystem and its needs and the steep learning curve they faced upon appointment. Jack Stark emphasized that the Everglades remained a test of the country's commitment to the environment, observing, "as the Everglades goes, so goes the world. . . . It's the canary in the [coal] mine."¹¹³³

Other Friday events included a children's stamp design contest, judged by Garnett McGee, creator of the 1947 commemorative stamp and a festival, "One Community . . . One Great Celebration," all in Florida City. Ending in fireworks, the festival featured food, music, and historical displays. That afternoon in Chokoloskee, about 100 people observed a reenactment of the 1910 killing of Edgar Watson, an event known to many through Peter Matthiessen's 1990 historical novel, *Killing Mr. Watson*. From 6 to 10 p.m., Everglades City blocked off its downtown for a celebration that included country and swing bands, food, and free movie screenings. On Saturday and Sunday, a Taste of the Everglades Festival ran in MacLeod Park in Everglades City, featuring live music, food booths, arts and crafts displays, storytelling, and antique cars and swamp buggies.¹¹³⁴

The highlight of the anniversary was a Saturday afternoon rededication of the park on the same site in Everglades City that hosted the original dedication fifty years early. Vice President Al Gore was the keynote speaker before a crowd estimated at 2,800 (figure 25–2, Vice President Gore at 50th anniversary). The park and the Florida National Parks and Monuments Association did their best to recreate the ambience of the 1947 event, achieving what the *New York Times* described as "part political rally and part country fair." Many dignitaries were on hand, including SOI Bruce Babbitt, Governor Lawton Chiles, Senator Bob Graham, and EPA Director Carol Browner. The vice president wished the park a happy birthday and affirmed the administration's commitment to "preserving this park for all eternity and for all Americans." Gore was on his way to a global climate conference in Kyoto, Japan, and noted the extreme vulnerability of the Everglades to destruction by human-induced sea level rise. He underscored the administration's commitment to Everglades restoration as he announced a recently concluded deal to acquire 50,000 acres in the Everglades Agricultural Area.¹¹³⁵ The fate of this

¹¹³³ "Everglades Officials Celebrate 50th, Say 'As Park Goes, So Goes World,'" *South Florida Free Press*, Dec. 10–16, 1997.

¹¹³⁴ "Everglades National Park 50th Anniversary Celebration," program, EVER 58222; "Revisiting History," *Miami Herald*, Dec. 4, 1997.

¹¹³⁵ "In Celebration of the Everglades," *New York Times*, Dec. 26, 1997; "50 Years of Everglades National Park," *St. Petersburg Times*, Dec. 7, 1997; "Gore Announces Purchase of Plantation for Restoration of Imperiled Everglades," *Washington Post*, Dec. 7, 1997; Prepared text of Vice President Al Gore's remarks, Dec. 6, 1997, EVER-00952.

“agreement in concept” among the federal and state governments, the South Florida Water Management District, and St. Joe Paper Company is detailed in Chapter 28.



Figure 25-2, Vice President Gore at 50th anniversary

Close to 100 former park employees and perhaps 150 current employees participated in a reunion that coincided with the public anniversary events. Park Environmental Education Coordinator Sandy Dayhoff spent weeks tracking down former employees and getting invitations out. The highlight of the reunion was a dinner and social held Thursday evening, December 4, at the Keys Gate Golf and Tennis Club. Superintendent Ring introduced the six former superintendents, and attendees paid tribute to Dr. Bill Robertson, who was about to retire after forty-six years on the park staff. The park organized a number of special tours over the next three days as part of the reunion, including a catered lunch at the Pine Island chickee. Former staff also participated in many of the public events.¹¹³⁶

¹¹³⁶ “Everglades National Park Employee Reunion,” program, EVER-00886; Sandy Dayhoff, personal communication, Oct. 13, 2014.

Subsequent Anniversaries

In 2007, the park scheduled a week-long celebration for its 60th anniversary, in part to let the local community know that it was back in business following the hurricanes of 2005.

Compared to previous anniversaries, this one had a stronger focus on the human history of the area. The celebration began at the main visitor center on Saturday, December 1, with an Everglades film festival, a ceremony marking the dedication of the aboriginal Mud Lake Canal as a National Historic Landmark, and a public conversation with Superintendent Dan Kimball and Congressman Mario Diaz-Balart. On Sunday, researchers gave talks on various cultural resource topics in Homestead, and special talks and tours took place at Shark Valley. On December 6, Everglades City hosted a rededication ceremony and a panel of Floridians who had witnessed the original dedication. The festivities concluded on Sunday the 8th with a birthday party at the Royal Palm Visitor Center. Deputy Secretary of the Interior Lynn Scarlett participated in this event. The U.S. Senate and House passed resolutions formally recognizing the 60th anniversary.¹¹³⁷

¹¹³⁷ Schedule of Events to Commemorate 60 Years of Resource Stewardship and Visitor Enjoyment, EVER 22965; “Everglades National Park Celebrates 60 Years,” *Miami Herald*, Dec. 6, 2007; House Resolution 845 and Senate Resolution 392, 110th Cong., 2nd Sess.; Melissa Memory, personal communication, June 26, 2013.

Other Special Events

In 1982, the park celebrated its dual designation as a World Heritage Site and International Biosphere Reserve with the public unveiling of two plaques near the main visitor center (figure 27–1, World Heritage plaque). Southeast Regional Director Bob Baker was the master of ceremonies and NPS Director Russell Dickenson unveiled the plaques. Everglades champion Marjory Stoneman Douglas, UNESCO representative Dr. Francesco di Castri, and Assistant Secretary for Fish, Wildlife and Parks G. Ray Arnett delivered remarks. Buffalo Tiger, chair of the Tribal Council of the Miccosukee, also attended.¹¹³⁸

Given Marjory Stoneman Douglas’s long association with Everglades National Park and her efforts on its behalf, it was only to be expected that the park would celebrate her life when she passed away on May 14, 1998, at the age of 108. A public observance was held on May 23 at the Royal Palm Visitor Center, with Joe Browder delivering a eulogy. The park also created a temporary exhibit on her life in the main visitor center. Following Douglas’s wishes, Superintendent Richard Ring and Education Program Coordinator Sandy Dayhoff scattered her ashes over her beloved Everglades.¹¹³⁹

Dr. Bill Robertson was another individual with a long association with the Everglades. Following his death in January 2000, the park gave a program in his memory. Entitled “Remember a Man and Celebrate a Life,” the event took place on February 26, 2000. The day featured remembrances and tributes at a luncheon and the posthumous presentation of a meritorious service award.¹¹⁴⁰

Marjory Stoneman Douglas wrote in her autobiography, *Voice of the River*, that a fitting memorial to Ernest Coe would be a representation in bronze of a Florida panther. As she put it, “I’d love to see a life-sized replica of a catamount. . . . The catamount is the same as the Florida panther.” On April 27, 1990, just such a bronze statue was dedicated at the Royal Palm Visitor Center (figure 25–3, panther sculpture). The Institute for Scientific Information commissioned the statue from noted wildlife sculptor Eric Berg, partly to honor Douglas’s 100th birthday. Douglas spoke at the dedication and also wrote the inscription on a plaque for the statue: “Dedicated to the memory of Ernest F. Coe, without whose startling vision, steely endurance and indomitable will there would be no

¹¹³⁸ Dedication Program, Apr. 6, 1982, FNPMA records.

¹¹³⁹ “Memorial Tribute to Marjory Stoneman Douglas,” NPS media release, May 22, 1998; Supt. Ring to William T. Muir, May 23, 1998, EVER 58222. The park generally honors requests for ash-scattering, asking only that a permit be applied for.

¹¹⁴⁰ “William B. Robertson II, Glades Scientist,” *Miami Herald*, Feb. 2, 2000; Program for Robertson tribute, Feb. 26, 2000, EVER 58222.

Everglades National Park today.” The statue and plaque were later moved to the grounds of the new Ernest F. Coe Visitor Center.¹¹⁴¹

In April 2005, the park conducted a day-long event commemorating the 100th anniversary of Guy Bradley’s death.¹¹⁴² Special events with an interpretive emphasis, such as reunions at the Nike Missile Base and Vintage Days, are covered in Chapter 20.



Figure 25-3, panther sculpture

¹¹⁴¹ Douglas with Rothchild, 135; SAR, 1990; Colby Stong, “Marjory Stoneman Douglas: A Lifelong Passion for Preserving the Environment,” *The Scientist*, May 28, 1990. Douglas mentioned a bronze statue of a catamount in front of the Catamount Tavern in Bennington, Vermont. The tavern was frequented by Americans seeking to break from Britain in the 1770s.

¹¹⁴² SAR, 2005.



**Wilderness on the Edge:
A History of Everglades National Park**

*Chapter 26:
Organization, Planning, Budgets,
and Relationships with Other NPS Units*

Chapter 26: Organization, Planning, Budgets, and Relationships with Other NPS Units

Organization

As Everglades National Park grew and added staff, its organizational structure became more elaborate. From early on, the complex political and institutional set-up in South Florida required the superintendent to largely devote himself to dealing with the SFWMD, the Corps, conservation groups, and public officials from the governor on down to the sheriff of Monroe County. This made the position of deputy or assistant superintendent very important; it became evident that internal park operations would be the purview of the deputy. Everglades got its first deputy superintendent, Allyn F. Hanks, in January 1953. The park has had a deputy or assistant superintendent position ever since, although it has been left vacant for extended periods. As one recent deputy put it, “the superintendent is out of the park probably more than he is in it,” and the deputy has responsibility for “keeping operations rolling day to day.”¹¹⁴³

The organizational structure approved by the regional office in 1950 recognized five divisions within the park: Engineering, Protection, Naturalist, Biologist, and the Office of Chief Clerk. Maintenance was not a separate division; an automobile mechanic reported to the chief clerk, while the remaining maintenance personnel were in the Protection Division. By 1971, Protection had become the Division of Visitor Protection and Resource Management, and the Office of the Chief Clerk became the Division of Administration. The Naturalist Division was now the Division of Interpretation and Visitor Services. The Biologist Division was the Natural Science Division, and there was a Division of Maintenance and Rehabilitation. In 1977, the new South Florida Research Center took over many of the functions of the Natural Science Division. Natural resource management functions since then have been divided between the SFNRC and the Division of Resource and Visitor Protection.

As of this writing, the major divisions in the park remain unchanged since 1977; they are Interpretation, Resource and Visitor Protection, Administration, and Maintenance. There are four districts within Interpretation: Florida Bay, Pine Island, Flamingo, and Northwest (embracing Shark Valley and Gulf Coast). Education and outreach also falls under Interpretation. Under Resource and Visitor Protection are five districts: Pine Island, Flamingo, Florida Bay, Tamiami, and Gulf Coast. In addition, fee management and dispatch are in this division.¹¹⁴⁴ Administration encompasses contracting, budgeting and finance, human resources, and information management. The Maintenance (Facility

¹¹⁴³ Keith Whisenant, interview by author, May 24, 2011.

¹¹⁴⁴ In 2014, fire management was moved out of Resource and Visitor Protection into the SFNRC.

Management) Division has three districts (Pine Island, Flamingo, and Gulf Coast) and a professional services group. In addition to the four divisions, several smaller operations report directly to either the deputy superintendent or the superintendent and are part of the Office of the Superintendent:

- Planning and Compliance
- Concessions Management (see Chapter 23)
- Public Affairs Office
- Cultural Resources, including the South Florida Collections Management Center (see Chapters 17 and 18)

Finally, the director of the South Florida Natural Resource Center reports to the Everglades National Park superintendent. The site manager at Dry Tortugas National Park reports to the deputy superintendent.¹¹⁴⁵

Planning and Compliance Branch

In a park as large and complex as Everglades, many different planning documents are required. These range in scope from a GMP (described below) to plans for concessions, interpretation, integrated pest management, and the like. Additionally, many proposed activities in the park entail compliance with the National Environmental Protection Act (NEPA), the National Historic Preservation Act (NHPA), the Wilderness Act, and other federal legislation. In the early to mid-1990s, a committee headed by Wildlife Biologist Skip Snow coordinated NEPA compliance. Snow was eager to devote more of his time to his core duties, and for about two years, NEPA compliance was handled on an ad hoc basis. In the late 1990s, Brien Culhane, then a special assistant to the superintendent largely working on park planning, was asked to head up a new branch, Planning and Compliance. The branch “coordinates the development, completion, and implementation of all the various levels of planning documents required by law, policy or regulation” for Everglades and Dry Tortugas National Parks. Until October 2007, the branch had responsibility for compliance actions under both the NEPA and the NHPA. The park hired a cultural resources branch chief in October 2007, who then took lead responsibility for NHPA compliance, although Planning and Compliance continues to have a coordinating role and maintains the administrative record. The Planning and Compliance Branch also had responsibility for the South Florida Collections Management Center until the cultural resources branch was created.¹¹⁴⁶

¹¹⁴⁵ ENP organization charts, Oct. 10, 2006, Jan. 2013, EVER 22965; Michael Jester, interview by author, Jan. 19, 2012.

¹¹⁴⁶ Brien Culhane, interview by author, Oct. 7, 2011; Annual Reports, ENP Planning and Compliance Branch, FY 2005–2010.

The workload of the Planning and Compliance Branch is large and complex. In 2001 and 2002, the branch coordinated the preparation of business plans for Everglades and Dry Tortugas National Parks. The plans were part of a national initiative undertaken by the NPS in partnership with the NPCA. Graduate students from Duke and Yale Universities visited the park and worked with park staff to gather data on and analyze park finances, functional responsibilities, resource gaps, and funding needs. The resulting plans suggested strategies for improving business practices and increasing efficiency and made the case for funding increases to meet specific deficiencies. The plan for Everglades identified a total annual funding shortfall of \$10 million and the need for eighty-seven full-time-equivalent positions to meet optimal performance levels. The plans were widely shared with park stakeholders and members of Congress.¹¹⁴⁷

Coordinating the development of Everglades National Park's GMP, the Flamingo Commercial Services Plan, and the Fire Management Plan has been a major focus of the branch in recent years. Work on the environmental assessment and other aspects of the Fire Management Plan began in 2006. The East Everglades addition to the park required several studies that were supervised by the branch, including an archeology study, a survey and evaluation of hunting camps, and an inventory of airboat trails. Beginning in FY 2007, the branch began to work on the issue of the seven-mile-long corridor owned by Florida Power and Light Company that runs through the East Everglades addition. The branch also coordinates resource-specific studies. These have included a manatee study, an aerial survey of boating and fishing activity in Florida Bay, and an assessment of sea grasses in Florida Bay. Environmental assessments are also needed for construction projects, such as major repairs to the sea walls at Flamingo. The results and recommendations of many of these studies then must be incorporated into the ongoing GMP effort. An increasing amount of the branch's time is being devoted to adjacent land issues. Branch staff must review and assess the impact of activities proposed for nearby properties that have could affect the park and its resources.¹¹⁴⁸

Increasingly, the branch is involved in projects that extend beyond the park's boundary. In 2006, the branch participated in the development of a brochure, *South Florida Nature Guide—Discover Hidden Treasures*. The guide provided information on forty-five county, state, and national parks. The branch also had an important role in preparing an environmental impact statement for the *South Florida and Caribbean Parks Exotic Plant Management Plan*. Another multiyear project was the Biscayne-Everglades Greenway. In mid-2002, the city of Homestead began to explore the recreational opportunities of a dedicated bicycle trail connecting Biscayne and Everglades National Parks. The project took on the name of the Biscayne-Everglades Greenway. Both parks, Florida City, and the Miami-

¹¹⁴⁷ SAR, 2001, 2001; *Flamingo Commercial Services Plan*, 1–6.

¹¹⁴⁸ Brien Culhane, interview by author, Oct. 7, 2011; Annual Reports, ENP Planning and Compliance Branch, FY 2005–2010.

Dade Department of Parks & Recreation backed the plan. As of early 2012, the right-of-way and infrastructure for the trail were in place, and funding was being sought for trail amenities including a paved surface, parking, shelters, and other support facilities. Full implementation of the planners' vision will require \$30 million or more.¹¹⁴⁹

Each year, the Planning and Compliance Branch is responsible for identifying and evaluating hundreds of undertakings that trigger the provisions of the NEPA, the NHPA, the Wilderness Act, and other legislation for both Everglades National Park and Dry Tortugas National Park. Analysis of applications for wetlands mitigation on nearby properties under Section 404 of the Clean Water Act of 1972 is a major part of the workload. For projects within the park, decisions must be made about what level of documentation is required for NEPA and NHPA compliance, the appropriate disciplines consulted, and the process followed through to completion. Every year, some eleven to twenty proposed projects in the park involve the installation of structures or the use of motorized vehicles or mechanized equipment in wilderness areas. Each project must be analyzed based on the necessity for carrying out the activity in wilderness and a determination made of the minimum tools required to accomplish project objectives. Both the branch's planning and environmental compliance functions are hampered by a lack of staff and funding. Additionally, the branch consistently relies on advice and participation from experts in other park branches, who themselves are often stretched thin.¹¹⁵⁰

Long-Range Planning Documents

As recounted in Chapter 7, master planning for Everglades National Park began in the late 1940s. In this period, NPS frequently updated its master plans; this was especially the case in the Mission 66 era. The park in recent decades has continued to operate under the broad direction provided by its latest master plan, approved in 1979. That plan noted that efforts to balance visitor enjoyment with resource protection had been "largely successful," adding "there is no valid reason to change the basic concept of development and use for the entire park." In 2000, the park began the process of preparing its first general management plan (GMP), which will replace the 1979 master plan. A GMP provides a broad conceptual framework to guide park decision-making over the course of fifteen to twenty years. As a first step, the park entered into a project agreement with the NPS Denver Service Center for the services of its planners and began internal scoping sessions. By early 2003, the park was ready to begin involving the public in the GMP process. It began producing GMP newsletters as the primary means of keeping the public

¹¹⁴⁹ "Bike Paths a Vision in Progress," *Miami Herald*, Mar. 25, 2007; Rails-to-Trails Conservancy, http://www.railstotrails.org/resources/documents/ourWork/PromotingTrailUse/mgp/2012_Miami.pdf; Annual Reports, ENP Planning and Compliance Branch, FY 2006–2007.

¹¹⁵⁰ Brien Culhane, interview by author, Oct. 7, 2011; Annual Reports, ENP Planning and Compliance Branch, FY 2005–2010.

informed and soliciting its views. The first newsletter in January 2003 explained the GMP process and invited the public to participate. Those unable to attend public meetings were invited to write or email their comments. By this point, Everglades National Park Planner Fred Herling was coordinating the GMP process.¹¹⁵¹

The planning team held six public meetings in 2003 and had separate meetings with representatives of public agencies and groups. About 230 people attended the public meetings and altogether, some 1,800 comments were received. Those who attended the meetings seemed most concerned about maintaining access to backcountry areas, particularly by motorboat, and having improved recreational facilities. Mary Munson, regional director for the National Parks Conservation Association saw a need for the NPS to “find new ways for the local folks to connect with the park.” In a second edition of the newsletter in September 2003, the park summarized the comments it had received and explained that the planning team would move on to formulating a series of alternatives describing future park conditions.¹¹⁵²

Recovery from the hurricanes of 2005 put a heavy strain on park staff and set back the park’s GMP process. In addition, the NPS decided to expand the scope of the GMP to include a wilderness study of the newly acquired East Everglades Expansion area. By law and policy, the NPS is required to evaluate the wilderness potential of undeveloped areas that are added to a park. The NPS believed that folding the wilderness study into the GMP process would save time and money; it also meant that new public meetings and a new public comment period were needed. In addition, the 2005 hurricanes had damaged the Flamingo lodge and cottages beyond repair, and the park began the preparation of a commercial services plan (CSP) dealing with recreational services and overnight accommodations at Flamingo. The CSP had its own schedule for public involvement, and its final conclusions were to be integrated into the alternatives generated for the GMP.¹¹⁵³

The planning team spent much of 2006 and early 2007 preparing and reviewing GMP alternatives. In May 2007, the park released the four alternatives and sought public comment, holding six public workshops around South Florida. Possible restrictions on motorboat access to Florida Bay and other park waters to protect the seabed emerged as an issue of considerable interest. Many of the attendees at the public meetings were recreational fishermen. After evaluating comments, the park revised the preliminary alternatives and released them for public comment in February 2009. Seven public meetings were held in March and April. This new round of public comments led to

¹¹⁵¹ NPS, *Everglades National Park Master Plan*, May 1979, 2; SAR, 2000; ENP, *General Management Plan, Newsletter One*, Jan. 2003, EVER 22965; “Glades Plots Path for Next 20 Years,” *Miami Herald*, Jan. 28, 2003.

¹¹⁵² ENP, *General Management Plan Newsletter #2*, Sept. 2003, EVER 22965; “Public Wants More of ‘Old’ Everglades,” *Miami Herald*, Feb. 29, 2003.

¹¹⁵³ ENP, *General Management Plan Newsletter 3*, June 2006.

further revision of the alternatives, which were then presented to the NPS Southeast Regional Office in February 2010. In the meantime, the nation had gained a new Democratic administration and a new NPS director, Jon Jarvis. After conferring with the director, the park decided the planning for Flamingo and Everglades City needed to be revisited. The high cost of the planned Flamingo lodging, the short season, and the susceptibility of both areas to hurricanes and sea-level rise needed further study.¹¹⁵⁴

The draft GMP underwent further revisions and was released for public comment in late February 2013. The park held public meetings in Homestead and Key Largo to present the latest draft and solicited comments on-line and by mail. Park staff devoted considerable time in 2013 and 2014 to analyzing public comments and making adjustments to the plan. As of this writing, the plan is undergoing review at the regional and Washington levels, and final approval is pending.¹¹⁵⁵

The draft GMP commits park management to undertaking “comprehensive climate change planning to anticipate, adapt to, and mitigate climate change impacts.” The park will also “pursue opportunities through park operations and visitor services to use and promote green technologies and products and reduce overall energy and resource consumption.” The GMP further states that the park will prepare a climate action plan; scoping for and development of this plan lie sometime in the future.¹¹⁵⁶ Because the highest point in Everglades National Park is eight feet above sea level, the park is at substantial risk from projected rises in sea level caused by global warming. Climate change may also lead to more intense hurricanes and other changes in weather patterns. The first concrete results of the renewed emphasis on the effects of climate change are reflected in the plans for the redevelopment of Flamingo and in the ongoing planning for the redevelopment of the Gulf Coast facility in Everglades City (see Chapter 7).

¹¹⁵⁴ ENP, *Draft General Management Plan/East Everglades Wilderness Study*, May 2007 version, EVER 22965; “Anglers Make Spirited Pleas,” *Miami Herald*, June 10, 2007; “Park Education Necessary,” *Miami Herald*, Sept. 16, 2007; ENP media release, Mar. 2010, <http://parkplanning.nps.gov/projectHome.cfm?parkId=374&projectId=11170>; “Work on Long-Range General Management Plan for Everglades National Park Slows Down,” *National Parks Traveler*, Jan. 3, 2012, <http://www.nationalparkstraveler.com/2012/01/work-long-range-general-management-plan-everglades-national-park-slows-down9238>.

¹¹⁵⁵ NPS, “Media Availability of Draft Everglades National Park General Management Plan,” Mar. 12, 2013, <http://www.nps.gov/ever/parknews/media-availability-for-everglades-national-park-draft-general-management-plan.htm>; Fred Herling, personal communications, Aug. 22, 2013, and June 26, 2014.

¹¹⁵⁶ Draft GMP, 10–11, 31–35.

Public Affairs

Everglades National Park has had a staff member assigned to public information duties since some time in the 1970s. Pat Tolle arrived in the park in 1972 and by 1979 was being described in news articles as the park's "spokesperson"; in 1981, she assumed the title of public affairs officer. After Tolle's retirement in 1994, Rick Cook was public affairs officer until 2005. Linda Friar holds the public affairs officer position as of this writing. The public affairs officer prepares approximately seventy media releases annually and responds to thousands of requests for information.¹¹⁵⁷

Budgets

Everglades National Park was established at a time when the service was still suffering from the drastically reduced funding levels of World War II. Congress actually cut the NPS's operating program allocation by 12.4 percent in fiscal year 1948. The service received a healthy increase for fiscal year 1950, but subsequent increases were small until 1956, when the agency received its full budget request for the first time since the war. Funding for the Everglades was barely adequate in the early 1950s. The park's budget was cut by 17 percent in fiscal year 1953, and Superintendent Beard complained that he had to detail rangers to collect garbage because he could not hire maintenance employees. The Mission 66 program began in 1957, and Everglades benefitted greatly during its ten-year run. The vast majority of the funds went for the development of park infrastructure, however, and allocations for personnel, planning, and research generally remained inadequate.¹¹⁵⁸

Budget shortfalls seemed to have had the greatest impact on staffing levels; there seems never to have been a period when Everglades was able to fill all of its allocated full-time positions. In 1974, for example, the park was able to fill only eighty-three of its ninety-eight (78 percent) allocated positions. It was not much different thirty years later—the park had forty-seven unfilled positions in 2003. It has not been possible to correlate allocated positions in the park with visitation because the park has not been consistent in its record-keeping. The late 1960s, when the federal budget was strained by spending on Great Society programs and the Vietnam War, was a particularly rough patch. In late 1968, Superintendent Raftery was forced to pull rangers from Fort Jefferson to handle winter crowds at Everglades and limit guided tours to five days a week. The high rates of inflation from 1973 through 1982 also presented challenges. Budgets increased, but

¹¹⁵⁷ "Fla. Bay Fish War Heats Up," *Miami News*, Sept. 22, 1979; "Glades Voice Says Goodbye," *Miami Herald*, June 15, 1994; Kathryn Brooks and Tiffany Shropshire, "Finding Aid, Public Affairs Collection, EVER 58222," 2009.

¹¹⁵⁸ Dwight F. Rettie, *Our National Park System: Caring for America's Greatest Natural and Historic Treasures* (Urbana: University of Illinois Press, 1995), 251; "National Park Service Appropriations," *National Parks Magazine*, Oct.–Dec. 1955, 191; SMR, Jan. 1952.

seemingly never by enough to account for rising prices. From 1981 to 1989, President Ronald Reagan attempted to rein in federal spending, particularly funds for adding to federal land holdings. Everglades National Park's budget dropped 4.4 percent in fiscal year 1986 and by 15.6 percent in fiscal year 1989. As outlined above in Chapter 11, the South Florida Research Center received increased funding following the enactment of the Comprehensive Everglades Restoration Plan in 2000, but funding for basic park operations have remained flat.¹¹⁵⁹

Relationships with Other NPS Units

At the 1947 establishment of Everglades National Park, Florida had three units of the National Park System: Fort Jefferson National Monument, Fort Matanzas National Monument, and Castillo de San Marcos National Monument. The Castillo and Fort Matanzas had been administered by the Department of the Army until transferred to the NPS in August 1933. President Franklin Roosevelt designated Fort Jefferson a national monument on January 4, 1935. Beginning January 1, 1942, C. Ray Vinten, based at the Castillo in Saint Augustine, held the position of coordinating superintendent for southeastern monuments. He had responsibility for the Castillo, Fort Matanzas, Fort Jefferson, and sites in Georgia and South Carolina. After World War II, new units kept being added to the system in the Southeast, including DeSoto National Memorial on Tampa Bay, authorized in 1948, and Fort Caroline National Memorial on the St. Johns River east of Jacksonville, authorized in 1950. The NPS in 1951 abolished the position of coordinating superintendent. By this time, Fort Jefferson had already been placed under the administration of the Everglades superintendent, effective December 1949 (figure 26–1, Fort Jefferson in Dry Tortugas National Park). In February 1958, the NPS director brought clarity to this arrangement by formally designating the Everglades superintendent as the superintendent of Fort Jefferson as well. At times between 1949 and 1959, the site manager at Fort Jefferson was styled a superintendent in NPS literature, but they never had the formal designation. For a brief period, from August 20, 1969, to November 14, 1971, the NPS experimented with an Everglades Management Group. During this period, the Everglades superintendent had a coordinating role for DeSoto, the Castillo, Fort Matanzas, and Fort Caroline.¹¹⁶⁰

¹¹⁵⁹ SAR, 1974; "Budget Cuts Limit Visitors' Services in Everglades Park," *New York Times*, Nov. 17, 1968; "Everglades Has Funding Shortfall," *Miami Herald*, May 26, 2003; "Park May Get \$789,000 Boost to Ease Effects of Cutbacks," *Miami Herald*, Jan. 22, 2004.

¹¹⁶⁰ NPS Director to All Field Offices, Feb. 4, 1959, EVER 22965; C. Ray Vinten, interview by Boyd Evison, Apr. 6, 1971, St. Augustine Historical Society, 62; Historic Listing of National Park Service Officials, http://www.nps.gov/history/history/online_books/tolson/histlist.htm.

Fort Jefferson National Monument (Dry Tortugas National Park as of October 1992)

As indicated above, since 1958, the Everglades superintendent has also been superintendent of Fort Jefferson. The staff at Fort Jefferson has always been small. A site manager at the fort, reporting to the Everglades deputy superintendent, handles day-to-day operations. Recent deputies have spoken of trying to get to the fort for a couple of days every month, but they usually only manage every third month. The Everglades/Fort Jefferson superintendent has generally become involved only in major issues affecting the fort. As an example, in the late 1980s, jet pilots from the Key West Naval Air Station were frequently triggering sonic booms in the air space over the fort. The booms detracted from the visitor experience and damaged the masonry of the fort. Superintendent Mike Finley, after failing to get results from the base commander, used his contacts in the media to make this a public issue and succeeded in stopping the sonic booms.¹¹⁶¹

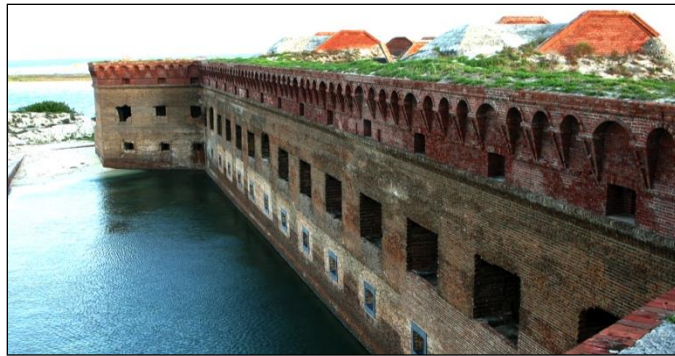


Figure 26–1, Fort Jefferson in Dry Tortugas National Park

Professional staff at Everglades have at times devoted considerable attention to the Dry Tortugas. In the late 1990s and early 2000s, the planning and compliance branch took the lead for the NPS in planning and implementing the Dry Tortugas Research Natural Area, established in January 2007. This is a forty-six-square-mile portion of Dry Tortugas National Park where some activities, such as fishing and bottom anchoring, are excluded. The Research Natural Area adjoins the Tortugas Natural Reserve of the Florida Keys National Marine Sanctuary, which lies to the northwest. Together, these protected areas help to conserve “shallow water marine habitat, ensure species diversity, and enhance the productivity and sustainability of fish populations,” while providing unique educational and research opportunities.¹¹⁶²

¹¹⁶¹ Robert Arnberger, interview by author, August 2, 2012; John Benjamin, interview by author, July 20, 2012; Michael Finley, interview by author, Nov. 19, 2012; Brien Culhane, interview by author, Oct. 7, 2011.

¹¹⁶² NPS and FFWCC, *Assessing the Conservation Efficacy of the Dry Tortugas National Park Research Natural Area* (Homestead, FL: NPS and FFWCC, 2007), 1; Brien Culhane, interview by author, Oct. 7, 2011. The story of the development of the marine sanctuary surrounding Dry Tortugas is beyond the scope of this history, but it should be noted that it was largely the work of Gary Davis while in the South Florida Research Center that ultimately produced the sanctuary.

Fort Jefferson has traditionally been a popular vacation and fishing destination for members of congress and other VIPs. Jack Stark, Everglades superintendent from 1971 to 1976, has related that taking care of the needs of members of congress visiting Fort Jefferson was important to his success as superintendent. NPS directors, dating to George Hartzog (1964–1972) if not earlier, have used trips to Fort Jefferson with members of congress and other decision makers to advocate for agency positions in a laidback atmosphere far from the distractions of Washington. For these reasons, agency policy has been to leave day-to-day operations at the Dry Tortugas to a site manager, under the watchful eye of the Everglades superintendent.¹¹⁶³

Biscayne National Park

As recounted in Chapter 9, the controversy over industrial development on the shores of Biscayne Bay became heated in the early 1960s. The Everglades superintendent and staff were involved in many public and private meetings concerning the fate of the bay and its islands. A desire to preserve portions of the area led to the October 1968 authorization and June 1970 establishment of Biscayne National Monument (redesignated Biscayne National Park in 1980) (figure 26–2, coral in Biscayne National Park). Everglades staff had many responsibilities in getting the new unit up and running. Biscayne got its first superintendent, Dale Engquist, in April 1971. The Biscayne superintendent was administratively under the Everglades superintendent until November 1971.¹¹⁶⁴



Figure 26–2, coral in Biscayne National Park

¹¹⁶³ Jack Stark, interview by author, July 10, 2012; Richard Ring, interview by author, July 18, 2012.

¹¹⁶⁴ SMR, Dec. 1962, June 1963, Apr. 1966, Aug. 1966; Historic Listing of National Park Service Officials, http://www.nps.gov/history/history/online_books/tolson/histlist.htm.

Big Cypress National Preserve

Congress passed an act in October 1974 authorizing the establishment of Big Cypress National Preserve, adjoining Everglades National Park on the northwest (Figure 26–3, cypresses in Big Cypress National Preserve). Everglades staff made significant contributions to the planning for the new unit. Irvin L. Mortenson became the unit’s first manager in October 1976, reporting to the superintendent of Everglades. Big Cypress remained administratively under Everglades National Park until 1986. Soon after arriving at Everglades, Superintendent Michael Finley reviewed the management relationship and determined that BICY should be administratively distinct. The NPS Southeast Regional Office approved his recommendation, and in 1986, Big Cypress began reporting directly to the regional office. Because the preserve and the park are adjacent, staff and responsibilities are shared among the two units at times.¹¹⁶⁵

State Coordinator Responsibilities

For many decades, the NPS designated one superintendent in each state as state coordinator. This generally was the superintendent of the largest or most centrally located unit. The state coordinator monitored issues of potential political or environment concern to the NPS and was a liaison for the service’s external programs. For example, the state coordinator kept an eye on national historic landmark properties and designated staff to investigate candidates for designation as national natural landmarks. In May 1967, for example, Superintendent Roger Allin directed park staff to evaluate Jupiter Island as a potential national natural landmark. The position of state coordinator no longer exists in the Southeast Region.¹¹⁶⁶



Figure 26–3, cypresses in Big Cypress National Preserve

¹¹⁶⁵ SAR, 1974, 1986; RDSE to Supt., Dec. 27, 1976, EVER 22965; Historic Listing of National Park Service Officials, http://www.nps.gov/history/history/online_books/tolson/histlist.htm.

¹¹⁶⁶ SMR, Aug. 1966, Aug. 1967; Supt. Good to Florida supts., Jan. 12, 1977, EVER 22965. See the NPS website for further information on the national natural landmarks program, <http://www.nature.nps.gov/nnl/>.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 27:
Park Designations and International Relationships

Chapter 27: Park Designations and International Relationships

The significance of Everglades National Park has been recognized at the national and international levels through a number of formal designations. In addition, the park is involved in two formal binational partnerships with the Bahamas National Trust and Brazil's Pantanal National Park.

National Register of Historic Places and National Historic Landmark Listings

As of this writing, the properties within Everglades National Park in the following table have been placed on the National Register of Historic Places. The second through eighth sites and districts in the table are nominated under the historic contexts and registration requirements contained in a multiple property documentation form, "Archeological Resources of Everglades National Park," accepted November 5, 1996. As mentioned in Chapter 17, as of this writing, a contractor is preparing National Register documentation for Mission 66 era park resources. In May 2005, the Mud Lake Site was recognized as a National Historic Landmark. The eligibility of the Ten Thousand Islands as a National Historic Landmark is under consideration within the NPS.¹¹⁶⁷

¹¹⁶⁷ Melissa Memory, personal communication, June 26, 2013.

Name	Type	Date	Description
Turner River	Site	Dec. 14, 1978	A large site with thirty mounds; probably occupied from 200 BCE to AD 800.
Anhinga Trail	Site	Nov. 5, 1996	A low-lying site with artifacts from ca. AD 1400–1500.
Bear Lake Mounds	District	Nov. 5, 1996	Three sites from the Glades tradition.
Cane Patch	Site	Nov. 5, 1996	A black earth midden occupied from ca. AD 500–1400.
Monroe Lake	District	Nov. 5, 1996	Two earth middens from the Glades tradition.
Rookery Mound	Site	Nov. 5, 1996	An earth midden occupied from ca. AD 750–1700.
Shark River Slough	District	Nov. 5, 1996	Some sixty-two midden areas dating from ca. AD 1000–1947.
Ten Thousand Islands	District	Nov. 5, 1996	Some seventy prehistoric and historic sites on islands of this chain.
Nike Missile Site HM-69	District	July 27, 2004	A U.S. Army anti-aircraft missile installation with twenty-two contributing resources.
Mud Lake Canal	Site	Sept. 20, 2006	A 3.9-mile-long aboriginal transportation canal dating to at least ca. AD 1200–1400.

International Biosphere Reserve

Everglades National Park and Dry Tortugas National Park were designated an International Biosphere Reserve on October 26, 1976. The United Nations Educational, Scientific and Cultural Organization (UNESCO) established the International Man and the Biosphere (MAB) program in 1971. The program was an outgrowth of the U.N.'s 1968 Conference on the Conservation and Rational Use of the Biosphere and was formally endorsed by U.N. member states at the 1972 Conference on the Environment (sometimes called the first "Earth Summit"). The MAB program is an intergovernmental scientific endeavor that supplies the basis for improved relationships between people and their environments across the globe. The program emphasizes regional cooperation and has several subprograms focused on ecosystem types: mountains; drylands; tropical forests; urban systems; wetlands; and marine, island, and coastal ecosystems. An International Coordinating Council (ICC) defines the agenda for the MAB program. Under the 1995 Framework of the World Network of Biosphere Reserves and prior protocols, the ICC designates outstanding terrestrial and coastal marine ecosystems as

biosphere reserves. More than just protected areas, the reserves are conceived as laboratories for activities and programs that promote biodiversity and sustainable development. At this writing, the MAB program has recognized 580 biosphere reserves in 114 countries.¹¹⁶⁸

Everglades National Park was one of twenty U.S. sites proposed as biosphere reserves at a UNESCO-sponsored Man and the Biosphere conference held in Washington, DC, in September 1974. (See Chapter 24 for the 1982 ceremony celebrating the park's status as a biosphere reserve and world heritage site.).¹¹⁶⁹

World Heritage Site

Everglades National Park was designated as a World Heritage Site on October 26, 1979, under the Convention Concerning the Protection of the World Cultural and Natural Heritage of the United Nations (figure 27–1, World Heritage plaque). UNESCO drew up the convention in November 1972 in order to create “an effective system of collective protection of the cultural and natural heritage of outstanding universal value.” The convention established a World Heritage Committee, responsible for maintaining a List of World Heritage Sites and arranging for mutual assistance among nations in protecting sites of world importance. The committee was to have twenty-one members, with membership rotating among participating nations. The convention established procedures for participating nations to nominate sites to the World Heritage List. No site was to be placed on the list without the consent of the host nation. The convention went into effect in 1976, after twenty nations had ratified it. The United States was among the first states to ratify the convention. The enrollment of Everglades National Park as a World Heritage Site came at the third session of the World Heritage Committee, convened in Cairo and Luxor, Egypt, in October 1979.¹¹⁷⁰

¹¹⁶⁸ UNESCO, Biosphere Reserves Network, <http://whc.unesco.org/en/convention>.

¹¹⁶⁹ “U.S. Aiding Study on Environment,” *New York Times*, Sept. 18, 1974.

¹¹⁷⁰ UNESCO, Convention Concerning the Protection of the World Cultural and Natural Heritage, <http://whc.unesco.org/en/conventiontext>; Report of the WHC 3d Session, Oct. 22–26, 1979, <http://whc.unesco.org/archive/1979/cc-79-conf003-13e-pdf>.



Figure 27-1, World Heritage plaque

The World Heritage Committee (WHC) meets annually to consider additions to the World Heritage List and other matters. Under Article 11 of the convention, the WHC maintains a List of World Heritage in Danger. Site threatened by “serious and specific dangers,” such as the threat of disappearance or damage through development, war, or natural disaster, are candidates for the List of World Heritage in Danger. At its 17th session, convened in Cartagena, Columbia, in December 1993, the WHC placed Everglades National Park on the List of World Heritage in Danger. Park Superintendent Richard Ring presented a report at this session, noting that since the park had been listed in 1979 it had continued to be threatened by hydrological changes, surrounding development, and water pollution. He added that 1992’s Hurricane Andrew had caused considerable damage. Although measures were being taken to restore the Everglades ecosystem, the outcome of these efforts was considered uncertain, and the U.S. delegation asked that the park be added to the endangered list. The International Union for the Conservation of Nature and Natural Resources (IUCN) concurred in this assessment, and Everglades National Park went on the endangered list.¹¹⁷¹ Everglades National Park remained on the List of World Heritage in Danger until June 2007. At the 31st session of the WHC, convened in Christchurch, New Zealand, the U.S. delegation requested that the park be removed from the endangered list. This request was made by the co-leader of the U.S. delegation, Todd D. Willens, deputy assistant secretary for fish, wildlife, and parks in the Department of the Interior. Willens took this step on his own initiative; he later testified that he had not been directed to do so by his superiors in the department. He did confer with Louise V. Oliver, U.S. ambassador to UNESCO, who was the delegation’s other co-leader. It was later revealed that Oliver, as the State

¹¹⁷¹ UNESCO, Report of the WHC 17th Session, Dec. 11–16, 1993, 20–21, <http://whc.unesco.org/archive/1993/whc-93-conf002-14e.pdf>.

Department representative, was chiefly concerned with any WHC decisions that had foreign policy implications. Because Everglades National Park was a site under the jurisdiction of the DOI, she deferred to Willens on the question of delisting the park. Several WHC members spoke in favor of the change in designation and none spoke in opposition. In announcing its decision, the WHC applauded the United States for the progress it had made in “rehabilitating” the Everglades, citing that progress as the reason for removing the park from the endangered list.¹¹⁷²

The removal of Everglades National Park from the endangered list provoked considerable controversy. Jonathan Ullman, the Sierra Club’s Everglades field representative, told a reporter that Everglades was more threatened than ever. The editorial page of the *Orlando Sentinel* asked: “Exactly what world is the U.N. living in?” Florida Senator Bill Nelson branded the move political and called for Willens to resign. He believed that Willens had ignored an NPS recommendation that the park remain on the endangered list; this was denied by the George W. Bush administration. Senator Nelson thought that the move reflected the administration’s lack of commitment to Everglades restoration and convened a Senate hearing in September 2007. Under questioning, Willens claimed that the decision was made by the WHC but acknowledged that the committee almost always followed the wishes of the host nation. He stated that the U.S. government’s report that he brought with him to the meeting did indeed call for Everglades to be retained on the endangered list. It was entirely his decision to change “retain” to “remove” in that report. At the Senate hearing, a State Department representative testified that it was altering its procedures in the wake of what happened at the Christchurch meeting. In the future, the State Department representative at WHC meetings would not agree to material changes to a draft report without consulting with superiors in Washington. Following the hearings, Senator Nelson wrote SOI Dirk Kempthorne complaining of the administration’s action in removing the Everglades from the endangered list. The secretary responded by defending the action, stating that the major purpose of including Everglades on the list had been to draw attention to the urgency of the problems there. The administration believed that purpose had been accomplished and there was therefore no reason to retain endangered status.¹¹⁷³

¹¹⁷² UNESCO, Report of the WHC 31st Session, June 23–July 2, 2007, <http://whc.unesco.org/archive/2007/whc07-31com-24e.pdf>; UNESCO press release, June 24, 2007, in *The Everglades: Protecting Natural Treasures Through International Organizations*, Hearing before the Subcommittee on International Operations and Organizations, Democracy and Human Relations, U.S. Senate, 110th Cong., 1st Sess., Sept. 19, 2007, [www.gpo/fdsys/pkg/CHRG-110shrg44134/pdf/CHRG-110shrg44134/pdf](http://www.gpo/fdsys/pkg/CHRG-110shrg44134/pdf/CHRG-110shrg44134.pdf); DOI fact sheet, “Background on World Heritage Convention, U.S. participation, DOI leadership,” 2008, EVER 22965.

¹¹⁷³ “Everglades National Park Removed from Danger List,” *Orlando Sentinel*, June 27, 2007; “Removing Everglades from List Riles Nelson,” *Orlando Sentinel*, Aug. 5, 2007; Senate hearing, *The Everglades: Protecting Natural Treasures*, 4–6, 19.

In March 2009, Senator Nelson asked President Obama's SOI, Ken Salazar, to place Everglades National Park back on the endangered list. At the request of the U.S., the WHC, meeting in Brasilia, Brazil, in July 2010 restored Everglades National Park to the List of World Heritage in Danger.¹¹⁷⁴

Wetland of International Importance

The U.S. became a member of the Convention on Wetlands of International Importance in 1986. An international conference held in Ramsar, Iran, in January and February 1971 developed the convention (which is often referred to as the Ramsar Convention). The convention went into effect in 1975 after seven nations had ratified it. Signatories to the convention committed themselves to the conservation of wetlands and waterfowl through the establishment and maintenance of wetland nature reserves. Member countries nominate wetlands considered to be internationally significant for their ecology, botany, zoology, limnology, or hydrology to a List of Wetlands of International Importance. A Conference of Contracting Parties meets every three years; among its responsibilities is approving nominations to the List of Wetlands of International Importance. A Ramsar Secretariat, headquartered in Gland, Switzerland, is the convention's administrative body. The secretariat maintains the list and coordinates activities under the convention. As of this writing, the convention has 160 contracting parties and the list contains 2,000 wetlands.¹¹⁷⁵

¹¹⁷⁴ "Salazar Applauds World Heritage Committee's Decision to Return Everglades National Park to Danger List," DOI press release, July 30, 2010.

¹¹⁷⁵ Convention of Wetlands of International Importance Especially as Waterfowl Habitat, as Amended, Ramsar Convention website, <http://www.ramsar.org/>.

Everglades National Park was approved as a Wetland of International Importance (Ramsar No. 374; Wetland International Site No. 4US005) on June 4, 1987. This action was taken by the third Conference of Cooperating Parties, meeting in Regina, Saskatchewan, Canada. The park was nominated under Ramsar criteria 1 through 4:

1. As containing “a representative, rare, or unique example of a natural or near-natural wetland type.
2. As containing endangered species.
3. As supporting “populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.”
4. As supporting species “at a critical stage in their life cycles.”¹¹⁷⁶

Cartagena Convention

In 2012, Everglades National Park received designation under the Special Protected Areas and Wildlife (SPA) protocol of the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, also known as the Cartagena Convention. The convention was adopted in Cartagena, Columbia, on March 23, 1983, and went into effect October 11, 1986. Under the convention, member states are committed to the goal of better protecting the marine environment and reducing harmful impacts to it. To date, twenty-five nations have ratified the convention. The park anticipates that it will be able to exchange information with managers of other protected marine areas concerning threats to marine resources, learn of resource protection efforts elsewhere, and work on joint projects. To date, the park has not participated in any specific projects related to the convention.¹¹⁷⁷

¹¹⁷⁶ Ramsar Secretariat, *Handbook 17: Designating Ramsar Sites*, <http://www.ramsar.org/sites/default/files/documents/pdf/lib/hbk4-17.pdf>.

¹¹⁷⁷ Caribbean Environment Programme, <http://www.cep.unep.org/cartagena-convention>; NPS, *Everglades National Park State of Conservation* (Homestead, FL: NPS, 2013), 2, <http://www.nps.gov/ever/naturescience/upload/2013-EVER-State-of-Conservation-Report-Final-Deliverable-to-OIA.pdf>; Carol Mitchell, personal communication, Oct. 15, 2014.

Bahamas National Trust

The Bahamas National Trust was founded by an act of the Bahamian Parliament in 1959 as a membership organization with the mission of building and managing a system of national parks in the Bahamas. Its broad goal is to foster the permanent preservation of significant natural and historic sites in that nation. Everglades National Park Superintendent Dan Beard was a founding member of the trust. The trust's organic act provided for a council of expert outside advisors, including several representatives from the United States, all of whom are full voting members of the council. One of these was stipulated to be a representative of the NPS. Throughout the years, the Everglades superintendent, or sometimes the superintendent of another South Florida NPS unit, has served on the trust's council. The council meets once or twice a year, usually in Nassau, Bahamas (figure 27–2, mangroves at Inagua National Park, Bahamas).¹¹⁷⁸



Figure 27–2, mangroves at Inagua National Park, Bahamas

In 1995, the NPS and the Bahamas National Trust acted to give a more formal status to their cooperative relationship via a memorandum of understanding (MOU). The MOU specified cooperation in “research, conservation, and management of natural and cultural resources and in planning, development, and management of protected heritage sites.” The term of the original agreement was five years; it has been regularly renewed and remains in effect at this writing. Individual projects are accomplished by annexes to the MOU. Projects handled in this fashion have included a natural history survey and park feasibility study for the Cay Sal Banks, an examination of the natural system impacts of Brazilian pepper, fire management, and NPS assistance in the development of general management plans for Bahamian national parks. The transfer of surplus equipment from Everglades National Park to the Bahamian national parks has also been accomplished via the MOU.¹¹⁷⁹

¹¹⁷⁸ Bahamas National Trust website, http://www.bnt.bs/_m1714/Historical-Overview; Richard Ring, interview by author, July 18, 2012.

¹¹⁷⁹ MOU between NPS/DOI and Bahamas National Trust, Apr. 7, 1995; Annex I to MOU, June 13, 1996; Annex II to MOU, Jan. 17, 1997; Annex III to MOU, Aug. 5, 1997; Annex IV to MOU, Nov. 16, 1998; NPS Dir. Stanton to Glenn Bannister, President, Bahamas National Trust, Mar. 30, 2000, EVER 22965.

Relationship with Pantanal National Park in Brazil

In October 1997, Everglades National Park became a partner park with Pantanal National Park (Parque Nacional do Pantanal Matogrossense) in the state of Mato Grosso do Sul in Brazil (figure 27–3, a view in Pantanal Matogrossense National Park). Often described as the world’s largest contiguous wetland, the Pantanal embraces more than 75,000 square miles, mostly in Brazil, with smaller portions in Bolivia and Paraguay. A variety of ecosystems are found in the Pantanal, including seasonally inundated grasslands, swamps, and lagoons. The region supports a rich and diverse biota. In September 1981, Brazil made a national park of 520 square miles of the Pantanal laying between two rivers, the Baía de São Marcos and the Gurupi. Like Everglades National Park, Pantanal National Park has been designated a World Heritage Site, a Wetland of International Importance, and an International Biosphere Reserve. It was evident that the many similarities between the two ecosystem complexes meant that managers would benefit from sharing ideas and practices related to resource conservation and park administration. The Everglades-Pantanal Initiative held its first international workshop July 13–16, 2011, at Everglades and on the campuses of Florida Atlantic University and Florida International University. Among the topics discussed were cooperation among institutions, the direction and organization of the initiative, and collaboration on grant proposals for research and education.¹¹⁸⁰



Figure 27–3, a view in Pantanal Matogrossense National Park

¹¹⁸⁰ Partner Parks Declaration between the Everglades National Park and the Pantanal National Park, Oct. 14, 1997, EVER 22965; website of Scott Markwith, Florida Atlantic University professor, <http://markwith.freehomepage.com>.



Wilderness on the Edge:
A History of Everglades National Park

Chapter 28:
The Everglades Becomes a Test Case
for Ecosystem Restoration: The Road to CERP

Chapter 28: The Everglades Becomes a Test Case for Ecosystem Restoration: The Road to CERP

As described in Chapter 9, researchers in the 1970s and 1980s gained a greater understanding of the Everglades ecosystem and the negative effects caused by the operations of the Central & Southern Florida Flood Control Project (C&SF Project). Scientists increasingly began to view South Florida as one interconnected hydrologic and ecological system that needed to be managed holistically. At the national level, the developing fields of systems ecology and conservation biology gave birth to the concept of ecosystem management. Ecosystem management emphasizes the goal of maintaining viable populations of all species in an ecosystem, with the area encompassed within an ecosystem defined by its natural functioning rather than by political boundaries. The concept requires a systems perspective rather than a narrow focus (for example, on one or a handful of species) as well as close cooperation among land managers within the ecosystem. Another key element is adaptive management, that is, adjusting management strategies based on the ongoing monitoring of the results obtained by various actions. Finally, ecosystem management tends to view humans as embedded within nature, not set apart from it. As the concept of ecosystem management gained ground, ecosystem restoration was seen as a logical next step. Proponents of ecosystem restoration established the goal of returning an ecosystem to some prior, presumably healthier, condition. Usually this was defined as its condition before “novel” or “outside” forces began to have an effect.¹¹⁸¹

Ecosystem management emerged as a particularly relevant approach for South Florida, with its mosaic of private, local, state, and federal land ownership. As ecosystem management gained traction as an idea, and many individuals and groups began pushing for restoration of the Everglades ecosystem, getting all of the competing interests to the table became key. The Lehtinen lawsuit over water quality and other environmental controversies had engendered a lot of acrimony and distrust. As described in Chapter 9, Congress in 1986 authorized the Restudy of the Central and Southern Florida Project, seeking, among other goals, to get recommendations for changes that would improve environmental conditions. In order for those recommendations to be enacted into law, some kind of consensus among Florida interests would be needed. Through Governor Lawton Chile’s Committee on a Sustainable South Florida, trust among various interests was rebuilt. Working with the Corps and the South Florida Water Management District (SFWMD), the committee was able to produce consensus recommendations for

¹¹⁸¹ R. Edward Grumbine, “What is Ecosystem Management?,” *Conservation Biology* 8, no. 1 (Mar. 1994): 27–38; William R. Jordan III and George M. Lubick, *Making Nature Whole: A System of Ecosystem Restoration* (Washington, DC: Island Press, 2011), 2–3, 170. It is evident that applying the concept of restoration to a natural system raises many questions, such as establishing a “reference state” or baseline condition for the Everglades ecosystem, given that ecosystems continually evolve.

ecosystem restoration. These recommendations, backed strongly by the Clinton/Gore administration, served as the basis for 2000's Comprehensive Everglades Restoration Plan (CERP). The CERP was projected to cost billions over a period of several decades. From the beginning, knowledgeable observers understood that maintaining political will and focus would be a key to the CERP's success.

Foundation Projects: Modified Water Deliveries and the C-111 Project

The Modified Water Deliveries and C-111 Projects described in Chapter 9 laid the groundwork for what emerged in 2000 as the CERP. After the passage of the CERP, these two programs as well as the dechannelization of the Kissimmee River came to be called "foundation projects." CERP stipulated that certain new projects, such as the decompartmentalization of WCA 3 and water storage in quarries would receive no appropriations until "the completion of the project to improve water deliveries to Everglades National Park" as specified in the 1989 Everglades National Park Protection and Expansion Act. Before turning to a narrative of the events leading up to the CERP, the history of the progress on Mod Waters and the C-111 Project up to the 2010 CERP Report to Congress will be related.

8.5 Square Mile Area (8.5 SMA), Now Known as the Las Palmas Residential Area

Following the mandate of the 1989 Everglades National Park Protection and Expansion Act and subsequent acts, the iterative testing of experimental water deliveries to the park continued in the 1990s. The service's goal of getting more water to the Northeast Shark Slough and Taylor Slough conflicted with the mission of the Corps and the SFWMD to provide flood protection for East Everglades residents and agricultural interests. This fundamental conundrum provided a clear demonstration of the lack of coordination between urban development policies and water management policies in post-World War II Florida. During the 1990s, Everglades National Park managers and many environmentalists came to believe that buying up as much of the land as possible between the park's eastern boundary and the L-31 and C-111 Canals would bring the most environmental benefits for the park. The concept was sometimes described as creating an eastern flow-way. Residents of the 8.5 Square Mile Area (8.5 SMA) and Frog Pond farmers were assertive in resisting acquisition, filing a number of lawsuits. As described in Chapter 9, Congress in 1989 had directed the Corps to prepare a general design memorandum (GDM) for both the Modified Waters Project and the C-111 Project. The Corps released its GDM for the Modified Waters Project in 1992. The GDM called for:

1. flood mitigation in the 8.5 SMA including a pump station, a flood mitigation canal, and a perimeter levee;
2. raising a portion of the Tamiami Trail to allow more water to flow south into the Northeast Shark Slough (NESS) section of the park, which would entail raising two Miccosukee camps to keep them from flooding;
3. structural modifications to allow more water to flow from WCA 3A to 3B and from WCA 3B to Canal L-29, along with measures to limit seepage to the east from WCA 3B and the park (known as the conveyance and seepage control component); and
4. a new operational plan that would allow 55 percent of total water releases to occur east of L-67, into the NESS.¹¹⁸²

Not long after the release of the GDM, Hurricane Andrew struck South Florida, causing flooding in the 8.5 SMA. The storm both slowed overall progress on Mod Waters and reinforced a belief that the 8.5 SMA could never entirely escape a threat of flooding. In 1994, Congress amended the Everglades National Park Protection and Expansion Act to allow funds appropriated for construction of flood control works to be used instead to purchase land in the East Everglades, including the 8.5 SMA. A full buyout of the 8.5 SMA emerged as the NPS's preferred solution. That same year, Governor Lawton Chiles appointed a committee that ultimately recommended that only the western portion of the 8.5 SMA be acquired, allowing the bulk of the area's residents to remain, protected by a levee and other flood control works. The board of the SFWMD in November 1998 approved a complete buyout of the 8.5 SMA. However, Governor Jeb Bush (served 1999–2007) made new appointments to the SFWMD Board, which promptly reversed the buyout decision. In July 2000, the Corps proposed a compromise solution, Alternative 6D, which involved the purchase of the western 40 percent of the 8.5 SMA, with the remaining, more heavily populated, 60 percent protected by a major perimeter levee. In 2003, Congress authorized the Corps to proceed with this alternative. The SFWMD then acquired the properties, some from willing sellers and some by eminent domain. Approximately eighty occupied tracts were purchased. More than 300 occupied tracts remained in the protected area (see figure 8–4). Land acquisition and construction of water control features were completed in 2008. A key feature was the location of pump station S-357 at the southern perimeter of the area; this pump discharges to a storm water treatment area (STA) that is part of the C-111 Project.¹¹⁸³

¹¹⁸² See U.S. Army Corps of Engineers, *Modified Water Deliveries to Everglades National Park, Central and Southern Florida Project, Part 1, Agricultural and Conservation Areas, Supplement 54, General Design Memorandum and Environmental Impact Statement* (Jacksonville, FL: Corps, 1992).

¹¹⁸³ Testimony and prepared statement of William Leary, Sr. Counselor to Asst. Sec. for Fish, Wildlife and Parks, *Issues Regarding Everglades National Park and Surrounding Areas*, 1999, 28–31; Alfred R. Light, "Tales of the Tamiami Trail," 72–75; Godfrey, 388–389; Nathaniel P. Reed to Michael Hayden, Asst. Sec. for Fish, Wildlife, and Parks, Oct. 7, 1992, NPR papers, box 4; "E. Glades Buyout Ordered; Wetland Residents Protest Decision," *Miami Herald*, Nov. 13, 1998; "Demolition Under Way in Miami-Dade," *Florida Sun-Sentinel*, Mar. 3, 2004; SAR, 2004.

Tamiami Trail Modifications

The 1992 GDM for Mod Waters assumed that if two additional spillway structures (355A and S355B, completed in 1996) were constructed along the L-29 Canal east of the S-333, sufficient water could flow into the NESS portion of the park via culverts under the Tamiami Trail. Subsequent studies showed that forcing water through the culverts would require a higher water stage in Canal L-29. This higher water level threatened to damage the trail, which was not acceptable to the Florida Department of Transportation. Planners began to look at options for elevating all or a portion of the trail on a bridge and strengthening the trail where needed. Constructing a bridge along the entire 10.7-mile section of the trail between the L-67 extension and L-31N seemed the best option to many, but the cost, as much as \$1.6 billion, was prohibitive. Various alternatives were studied and discussed with the Florida Department of Transportation, the park, and other interested parties. The option finally authorized by Congress in 2009 had three components: 1) elevating a one-mile section of the trail, 2) raising and strengthening the remaining 9.7 miles of the trail so as to accommodate an 8.5-foot stage in Canal L-29, and 3) constructing spreader swales at the downstream openings of culverts 43 and 51. The spreader swales were meant to disperse water flows over a wider expanse, more closely imitating sheet flow. Construction of the one-mile bridge began in March 2010 under a contract awarded to Kiewit Construction Company and was completed in March 2013. All of the funding for this project came from the federal government. Two Indian camps along the trail, Tigertail Camp and Osceola Camp, needed to be raised to protect them from the higher water stage. Tigertail Camp has been raised and discussions continue on raising Osceola Camp. The spreader swale pilot project was suspended in 2010 because of cost concerns, but it may be resumed in the future.¹¹⁸⁴

Because the one-mile Tamiami Trail bridge was expected to provide less than half of the water that the NESS needed, Congress in 2009 also directed the NPS to evaluate options for elevating additional portions of the trail. The NPS prepared a Final Environmental Impact Statement (FEIS) for what became known as the Tamiami Trail Modification: Next Steps Project, published April 26, 2011. The key finding of the FEIS was that another 5.5 miles of the trail needed to be raised. In the Consolidated Construction Act of 2012 (P.L. 112–74), Congress authorized construction of the Next Steps Project. The

¹¹⁸⁴ Audubon Florida, “Tamiami Trail One-Mile Bridge,” Mar. 2013, <http://audubonoffloridanews.org/wp-content/uploads/2013/03/Tamiami-Trail-One-Mile-Bridge-March-2013.pdf>; NPS, *Tamiami Trail Modifications: Next Steps, Draft EIS* (Homestead, FL: NPS, April 2010), 2–1—2–3; see also Omnibus Appropriations Act of 2009, 123 STAT 708. The alternative approved by Congress in 2009 was alternative 3.2.2.a from the Corps’ 2008 *Modified Water Deliveries to Everglades National Park Tamiami Trail Modifications Final Limited Reevaluation Report and Environmental Assessment*, www.saj.usace.army.mil/dp/mwdenp-c111/index.htm. Chapter 3 of the National Research Council’s 2008 review has details. SAR, 2007, 2010; Corps and DOI, *Comprehensive Everglades Restoration Plan, 2010 Report to Congress*, D-4, http://www.evergladesplan.org/pm/pm_docs rtc_2010/rtc_2010_final.pdf.

initial cost estimate for raising the 5.5-mile section was \$350 to \$400 million. Believing it would be difficult to obtain that sum, NPS Director Jon Jarvis in January 2013 told Everglades Superintendent Dan Kimball and DOI Director of Everglades Restoration Initiatives Shannon Estenoz¹¹⁸⁵ to seek the approximately \$180 million needed to raise 2.6 miles of the trail. Kimball and Estenoz began discussions with Florida Secretary of Transportation Ananth Prasad. When it came time to discuss dollars, Kimball and Estenoz swung for the fences and asked the state for \$90 million. In August 2013, Florida Governor Rick Scott committed the state to providing that sum, leaving the federal government to supply the remaining \$90 million. The U.S. Department of Transportation (USDOT) committed \$20 million in Transportation Investment Generating Economic Recovery (TIGER) funds, and the NPS plans to get the remaining \$70 million from the USDOT's Federal Lands Highway Program, spread out over several years. The project for raising the 2.6-mile segment is expected to enter the design phase soon.¹¹⁸⁶

Because Mod Waters funding now has been fully committed, the construction of the Tamiami Trail one-mile bridge and the raising of the Osceola Camp will bring Mod Waters to a conclusion, without all of its original goals being met. The remaining unfinished business of Mod Waters includes: 1) modification of Levees L-67A and L-67C and their associated borrow canals to restore connectivity between WCAs 3A and 3B, and 2) backfilling the remaining five miles of the L-67 extension. Further work on these unfinished aspects of Mod Waters will fall under the CERP or other authorizations.¹¹⁸⁷

C-111 Project

As described in Chapter 9, tests 6 and 7 of the Experimental Water Deliveries Program involved both Northeast Shark Slough and Taylor Slough, the latter falling within the C-111 Project area. As required by the 1989 Everglades Preservation and Expansion Act, the Corps in May 1994 prepared a general reevaluation report (GRR) for the C-111 Project. The goal of the GRR was to propose system modifications that would maintain the existing flood protection for private lands east of the L-31N and C-111 while

¹¹⁸⁵ The DOI created the Office of Everglades Restoration Initiatives in 2003 as a means of coordinating the involvement of the many DOI agencies concerned with Everglades restoration.

¹¹⁸⁶ Acting Supt. Shawn Bengé to File, May 8, 2014,

<http://parkplanning.nps.gov/document.cfm?parkID=374&projectID=26159&documentID=59569>; Dan Kimball, personal communication, Oct. 15, 2014. Because Kimball and Estenoz began their discussions with Prasad when NPS budgets were constrained by the congressionally imposed sequester, they had to drive to meetings in Tallahassee and Orlando. They jokingly referred to the effort as "Driving for Dollars." Governor Scott's commitment to funding the project was influenced by his need to burnish his environmental record in advance of running for reelection in 2014. The state was also under intense pressure because large amounts of water had been discharged in 2013 from Lake Okeechobee to the St. Lucie and Caloosahatchee estuaries, with devastating effects on marine life. Raising an additional portion of the Tamiami Trail would potentially decrease the need for similar future releases.

¹¹⁸⁷ The Corps held public meetings on the L-67A and L-67C work in late 2008 before this aspect was dropped. SAR, 2009; *2010 CERP Report to Congress*, D-4.

providing more natural hydrologic conditions in the Taylor Slough and eastern panhandle areas of Everglades National Park (see figure 8–4). The preferred alternative in the GRR had the following components:

1. construction or modification of nine canals;
2. creation of a spreader canal along the lower portion of the C-111;
3. L-31 and S332D tieback levees;
4. construction of five pump stations;
5. degradations of the spoil mound along the southern edge of C-111, allowing water to flow into the park’s eastern panhandle;
6. construction of a new bridge over Taylor Slough for the park’s main road; and
7. purchase of 11, 866 acres, including Frog Pond and Rocky Glades for use as water detention areas.

The cost of the proposed modifications was set at \$121 million with estimated annual operating costs of \$12 million. Included in the GRR was a recommendation for the preparation of a combined operational plan for Mod Waters (Shark River Slough) and the C-111 Project (Taylor Slough and eastern panhandle).¹¹⁸⁸

As described in Chapter 9, the drawdown of canal levels to allow early planting of winter vegetables in the Frog Pond had been a source of bitter controversy (figure 28–1, tomato growing). When the area flooded in 1993 because of the high water stage maintained in canals, the farm operators sued the SFWMD.¹¹⁸⁹ This suit was unsuccessful, but the threat of litigation remained. Following the recommendation of the C-111 GRR, the SFWMD decided to purchase the Frog Pond acreage. The district at first was interested in only the western portion, but ultimately negotiated a purchase of the entire area for \$43 million. The purchase was filed February 7, 1995, and the deal closed in April 1996. The district, however, allowed the farmers to continue operations for a brief period under leases, before beginning to allow it to return to more natural functions. The acreage now functions as a water retention area.¹¹⁹⁰

Further progress on the C-111 Project was delayed largely because of concerns over the Cape Sable seaside sparrow, an endangered species. Iteration 7 of the Mod Waters ended prematurely in 2000, largely because of these concerns. The U.S. Fish and Wildlife Service (FWS) issued a preliminary biological opinion dated October 27, 1995, stating that the contemplated operations threatened the sparrow’s critical habitat. The opinion

¹¹⁸⁸ Corps, *Canal 111 (C-111) Final Integrated General Reevaluation Report and EIS* (Jacksonville: Corps, May 1994), syllabus; “The Experimental Program,” undated park fact sheet (ca. 2011). Preferred Alternative 6A was developed with input from Everglades National Park.

¹¹⁸⁹ *South Dade Land Corporation v. Sullivan*, 853 F. Supp. 404.

¹¹⁹⁰ “Growers Buy Agricultural Land Near Everglades,” *South Dade News Leader*, June 10, 1988; “\$43 Million Ends Farming in Frog Pond,” *Miami Herald*, Apr. 12, 1996; Godfrey, 381.

directed the Corps to prepare a remedial action plan. Disagreement over the contents of this plan led to further negotiations, which produced two versions of an interim structural and operational plan (ISOP, 2000 and 2001). The ISOP continued to be discussed and adjusted until June 2002, when the Corps issued a final environmental impact statement for the Interim Operational Plan (IOP). The IOP built on the ISOP and made use of structural features from Mod Waters and the C-111 Project. The IOP represented a temporary approach, intended to be replaced by the combined operational plan for Mod Waters and the C-111 Project recommended in the 1994 GRR. The combined plan is expected to set guidelines for operations that will enhance ecosystem restoration while maintaining other project objectives. Based on past experience, the park expects that the development of the combined plan to “involve potentially contentious discussions” among affected agencies and the general public. The Corps began the scoping process for the combined operational plan in June 2011.¹¹⁹¹



Figure 28–1, tomato growing

¹¹⁹¹ SFNRC, *An Assessment of the Interim Operation Plan* (Homestead, FL: SFNRC, 2005), 8–12; SAR, 2010.

A portion of the C-111 Project was accomplished with the construction of two new bridges carrying the main park road over Taylor Slough. This construction project was completed in October 2000 and dedicated in February 2001 (see Chapter 7). The first water retention/detention zone features of the C-111 Project have been completed, and some spoil mounds along the lower reach of the C-111 Canal have been removed. The C-111 spreader canal was included as one of the ten initial CERP projects in 2000, with an estimated cost of \$94 million. Because of the complexities involved, the project later was split into an eastern and western component. Phase 1, the western component, involves creating a nine-mile hydrologic ridge along the eastern boundary of the park. Embraced in this component are two above-ground water detention areas with pumps and related structural modifications of the C-111, C-110, and L31E Canals. Construction on the \$30 million western component began in January 2010 and its completion was celebrated in February 2013. The water detention areas along with the new and reconfigured canals help to maintain a higher water table along the eastern edge of the park even when canals farther east are drawn down to permit agriculture. In addition, new pumps, including the S-199 structure near the park's main entrance, can be used to keep the water table elevated. The park plans to do a quantitative analysis of the effects of the project on the hydrology, water quality, and species populations once the project has been in operation for three years. The eastern component is meant to improve water distribution in the Model Lands area east of the park. It likely will involve backfilling portions of the C-111 and a spreader canal.¹¹⁹²

The Clinton/Gore Administration Embraces Everglades Repair

William Jefferson Clinton had a mixed record on environmental issues as governor of Arkansas, but the environmental community was pleased with some of his campaign rhetoric and personnel choices. Environmentalists applauded his selection of Al Gore for vice president. Gore, author of *Earth in the Balance* (published June 1992) was among the most environmentally conscious of national politicians. The president also made Floridian Carol Browner administrator of the U.S. Environmental Protection Agency (EPA). She had headed the Florida Department of Environmental Regulation for two years and supported Everglades restoration. Clinton's choice for attorney general was Janet Reno, a South Floridian who knew and loved the Everglades. For the Department of

¹¹⁹² Carol Mitchell, personal communication, Oct. 15, 2014; Corps, C-111 Spreader Canal Phase 1 Project Implementation Briefing Memo, Jan. 2010; SFWMD, "C-111 Spreader Canal Western Project, Jan. 2013, http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/jtf_c111_western_project.pdf ; Corps, "C-111 Spreader Canal Western Project Fact Sheet," May 2009; Maj. Gen. Meredith W. B. Temple, Acting Chief of Engineers, to SOA, Jan. 2012, http://www.evergladesplan.org/pm/projects/project_docs/pdp_29_c11/013012_c111_chiefs_report.pdf ; 2010 CERP Report to Congress, D-6; NPS, "First Restoration Component to Directly Benefit the Park," Feb. 5, 2013, <http://www.nps.gov/ever/parknews/first-restoration-component-to-directly-benefit-the-park.htm>.

the Interior, Clinton chose Bruce Babbitt, the former two-term governor of Arizona. Environmentalists at first did not know what to make of Babbitt. He had been the chair of the League of Conservation Voters but also a cofounder of the Democratic Leadership Council, which represented the more business-friendly wing of the party.¹¹⁹³

Secretary Babbitt was the keynote speaker at the January 1993 annual meeting of the Everglades Coalition in Tallahassee. Park Superintendent Richard Ring worked with Jim Webb of The Wilderness Society to ensure that the secretary was flanked at the luncheon by Ring and the Corps' district engineer, Col. Terrence "Rock" Salt. Ring and Salt described the plight of the Everglades and explained that the Restudy of the Central and Southern Florida Project had been authorized but not funded. Not long after the meeting, Babbitt moved to make the Everglades the administration's top environmental priority. He arranged for the Corps to reprogram \$2 million to start on the reconnaissance phase of the Restudy.¹¹⁹⁴ The secretary came to understand that a number of federal agencies had responsibilities in South Florida and were spending billions, often without coordinating their efforts. In response, he formed the South Florida Ecosystem Task Force (Task Force) with high-level representatives from the Departments of Defense, Interior, Agriculture, Commerce, and Justice and the EPA. Under the Task Force at the field level was the South Florida Management and Coordination Working Group (Working Group). The Task Force was envisioned as a policy body, while the Working Group's goal was to build consensus among the agencies on various issues and coordinate the development of restoration alternatives. Babbitt and his assistant secretary for fish, wildlife, and parks, George Frampton, saw the Working Group as a means of keeping pressure on the Corps to accelerate the Restudy and make sure it seriously addressed environmental goals. The Working Group met monthly and briefed the Task Force at least twice a year to keep the latter up-to-date and involved. Federal legislation was needed in 1995 to allow representatives of nonfederal interests, notably the Seminole and Miccosukee tribes, to become full participants. The Task Force and Working Group have been instrumental in guiding the development and implementation of CERP.¹¹⁹⁵

¹¹⁹³ "Bill Clinton, Environmentalist?," *New York Times*, Jan. 5, 1993. Many believe that Browner was the principal author of *Earth in the Balance*.

¹¹⁹⁴ Under the Corps' planning process, a reconnaissance study was a preliminary step, followed by a feasibility study. The feasibility study would then go to Congress with a recommendation from the Corps' chief of engineers, and Congress would decide what to authorize and fund.

¹¹⁹⁵ "Babbitt to Form Task Force to Help Save the Everglades," *Palm Beach Post*, Feb. 23, 1993; Grunwald, 292–95; Richard Ring, interview by Brian Gridley, May 17, 2002; Michael Davis, interview by Brian Gridley Mar. 2, 2002; Terry Rice, interview by Brian Gridley, Mar. 8, 2001; George Frampton, interview by Brian Gridley, July 25, 2002, University of Florida Proctor Oral History Center; Godfrey, 306. The Task Force and Working Group formally came into being with the signing of an interagency agreement on September 23, 1993. It defined the Task Force mission as setting federal objectives for ecosystem restoration and "coordinat[ing] the development of consistent policies, strategies plans, programs, and priorities for addressing the environmental concerns of the South Florida Ecosystem."

A basic issue with the restudy was that its overarching purpose was declared to be ecosystem restoration while the C&SF Project remained a multiple-use endeavor. The easier part of the challenge was finding ways to store more fresh water so that more water could flow to Everglades National Park and other protected natural areas while the growing needs of urban water users continued to be met.¹¹⁹⁶ It was well understood that there were limits to surface water storage. Shallow reservoirs, such as the WCAs, lost much water to evapotranspiration and seepage. Second, maintaining high water levels in Lake Okeechobee and the WCAs degraded those environments. In addition, purchasing agricultural land in the Everglades Agricultural Area for more water storage and treatment was expensive and carried political risks because it put people out of work. For these reasons, finding alternatives to shallow surface water reservoirs emerged as a key focus of the restudy. Increasing the “natural” functioning of the ecosystem—providing more sheet flow and connectivity and improving water quality—was far more difficult than “increasing the water pie” via additional storage capacity. The chief way to restore more natural functioning was to remove water control structures—levees and canals—to encourage surface water flow (figure 28–2, North New River Canal). Removing engineering structures, however, increased the risk of flooding to residential areas and could limit the quantity of water in surface storage. To vastly oversimplify, in discussions surrounding the restudy, engineers tended to focus on fine-tuning the managed water system while biologists and environmentalists focused on removing barriers and letting the water flow.



Figure 28–2, North New River Canal

¹¹⁹⁶ Because of soil subsidence and other issues, agriculture in the EAA was expected to decline over time and therefore need less water.

While Secretary Babbitt viewed the restudy as the way to address the big picture of Everglades restoration, he also wanted to break the impasse over water quality. As described in Chapter 9, the 1992 consent decree in the Lehtinen suit had committed the state to creating stormwater treatment areas and establishing regulations requiring ranchers and sugar growers to adopt best management practices. The agricultural interests who had intervened in the original Lehtinen suit were not signatories to the consent decree and continued with lawsuits against the state.¹¹⁹⁷ In March 1992, the SFWMD adopted a Surface Water Improvement and Management (SWIM) Plan for the Everglades, which largely followed the terms of the consent decree and the 1991 Everglades Protection Act. Growers mounted legal challenges to the plan. The state Department of Environmental Regulation, the Miccosukee Tribe, the U.S. EPA, and several environmental groups were allowed to join that case as interveners. Florida's 1994 Everglades Forever Act put the force of law behind a number of the commitments embodied in the consent decree. It increased Florida's funding of land purchases, but it extended the deadline for establishing numerical phosphorous concentration standards to 2003 and the deadline for meeting the ppb targets until 2006. Several parts of the act were vague, and it included no mechanism for getting phosphorous to 10 ppb in federally protected areas, the level most scientists considered safe for the natural environment. The act had been introduced as the Marjory Stoneman Douglas Act, but when she learned of its final terms, the 103-year-old Everglades defender insisted that her name be removed.¹¹⁹⁸

Fearing that the water quality litigation would prove endless and get in the way of the restudy effort, Babbitt began closed-door negotiations with the two major sugar growers in the EAA, Flo-Sun, Inc. and U.S. Sugar Corporation (Big Sugar) (figure 28–3, sugar cane in the Everglades Agricultural Area). In July 1993, the secretary held a news conference in the auditorium at Main Interior in Washington to announce a grand bargain. With NPS Director Roger Kennedy, state officials, and representatives of U.S. Sugar and Flo-Sun at his side, Babbitt unveiled a statement of principles meant to bring closure to the water quality disputes. The growers committed to paying from \$240 to \$320 million of the total cleanup costs over twenty years, considerably more than the consent decree had required. The statement called for expanding the STAs to 40,000 acres but provided for a five-year delay in meeting water quality standards. Environmental groups and the Miccosukee Tribe denounced the deal as a sell-out to Big Sugar. Environmentalists believed that the sugar growers had reaped the lion's share of the rewards from the C&SF Project for decades, while the urban taxpayers of Southeast Florida footed the bill and the ecosystem declined. They insisted that sugar interests needed to bear more of the cleanup cost, advocating that large acreages in the EAA be

¹¹⁹⁷ Richard Ring, interview by Brian Gridley, May 17, 2002.

¹¹⁹⁸ Godfrey, 232. The state defined "the Everglades" as the three water conservation areas (including the Arthur R. Marshall Loxahatchee Wildlife Reserve) and Everglades National Park.

restored to marsh conditions. A few environmentalists believed the best solution was a complete elimination of sugar production in the EAA. By the end of the year, Secretary Babbitt's grand bargain had collapsed. Hoping that it would influence the other growers, the federal government concluded a separate agreement in January 1994 with Flo-Sun. The Everglades Coalition responded by beginning a campaign to place a new penny-a-pound tax on sugar. That effort ultimately failed. The acrimony created by the prolonged battle over water quality and the sugar tax complicated the effort to reach consensus on Everglades restoration goals.¹¹⁹⁹



Figure 28-3, sugar cane in the Everglades Agricultural Area

¹¹⁹⁹ Grunwald, 296–300; Hollander, 251–54; “A Compromise with Risks and Pratfalls?,” *Miami Herald*, Aug. 15, 1993; Kathy Westra to Paul C. Pritchard, Pres., NPCA, July 13, 1993, Everglades Coalition to SOI Babbitt, July 30, 1993, NPCA papers, box 75.

The Governor's Commission for a Sustainable South Florida

A key step in creating a consensus on ecosystem restoration was the formation by Governor Lawton Chiles in March 1994 of the Governor's Commission for a Sustainable South Florida (GC). No matter what recommendations came out of the restudy, they would need support from a majority of Florida stakeholders. Chiles hoped to get beyond the bitter atmosphere surrounding the water quality dispute and pursue larger environmental and water conservation goals. The forty-member GC had representatives from state and local government, agriculture and business, environmental groups, the SFWMD, and the Seminole and Miccosukee Tribes. Additionally there were nonvoting members from the DOI, the Corps, the EPA, and the National Oceanic and Atmospheric Administration. Everglades Superintendent Richard Ring was the ex-officio NPS member. Chiles chose Richard Pettigrew, former speaker of the Florida House of Representatives, to chair the GC. Participants in the process were unanimous in praising Pettigrew's painstaking efforts to foster trust among members through informal get-togethers and other means.¹²⁰⁰

Between summer 1993 and fall 1994, the Corps worked on the reconnaissance phase of the restudy of the C&SF Project. The main task during this phase was identifying the ecosystem's problems and laying out conceptual solutions. In Florida, District Engineer Salt chose Stuart Appelbaum to lead the restudy team. Appelbaum was a civilian employee of the Corps and an expert in water resource planning. He decided early on to do everything he could to break down barriers between professional disciplines and agencies.¹²⁰¹ He wanted to put the engineers and the ecologists in the same room. With support from the Task Force, the Corps worked closely with the SFWMD and encouraged public participation in the planning process, something of a novelty for the Corps. The Corps had the benefit of a 1992 proposal for Everglades ecosystem restoration put together by the Everglades Coalition. The Science Sub-Group of the Working Group also produced a report on restoration goals in November 1993. Some saw the sub-group's report as unrealistic because it advocated a return to predrainage ecological conditions and said almost nothing about the flood control and water supply goals that the Corps were required to meet. The Corps released its restudy reconnaissance report in November 1994. The report confidently stated that the "hydrologic function of the historic South Florida ecosystem can be recovered." The report recommended that a feasibility study be prepared and outlined the goals for that portion of the restudy. Most of the report zeroed in on environmental restoration goals, calling in general terms for

¹²⁰⁰ Grunwald, 300–301; Terry Rice, interview by Brian Gridley, Mar. 8, 2001.

¹²⁰¹ John Ogden, who was a biologist with ENP when the reconnaissance study began, moved to a position with the SFWMD in 1996. John Ogden, interview by Brian Gridley, EVG 7, Apr. 10, 2001 and Stuart Appelbaum, interview by Brian Gridley, EVG 11, Feb. 22, 2002, University of Florida Proctor Oral History Center.

expanded surface water storage areas and the acquisition of 80,000 to 260,000 acres to meet project goals. The authors believed that with those acquisitions, new engineering structures, and operational changes, the ecosystem could recover a substantial degree of its “natural” functioning. From the beginning, an adaptive management approach was considered essential for a project that had so many uncertainties.¹²⁰²

The Governor’s Commission had been formed after the reconnaissance study was under way. In spring 1995, Col. Terry Rice (who had succeeded Salt as district commander in August 1994) urged the GC to come up with a more nuanced and detailed conceptual plan for Everglades restoration. Rice’s career with the Corps had involved him in a number of foreign projects, and he had developed considerable political sensitivities. He realized that strong backing from all the interests represented on the GC was critical in getting any restoration plan approved by Congress. The GC got most of its technical advice from the staff of the SFWMD and the Corps. The Corps’ Stuart Appelbaum and his team members spent the better part of a year facilitating the GC’s work, essentially giving them a course in “Planning 101.” On October 1, 1995, the GC presented a consensus statement on the direction that the restudy should take. Then in August 1996, the GC released a more detailed Conceptual Plan for the Central & Southern Florida Project Restudy. The plan contained forty options for restoration grouped under thirteen thematic concepts. The GC’s conceptual plan included almost all of the features that eventually were included in the CERP, such as aquifer storage and recovery and conversion of stone quarries to reservoirs.¹²⁰³

¹²⁰² Cathleen C. Vogel, “Central & Southern Florida Project Comprehensive Review Study: Road Map or Road Block for the Future?,” *Water Resources Update* 11 (Spring 1998), 86–87; Stuart Appelbaum, interview by Brian Gridley, EVG 11, Feb. 22, 2002.

¹²⁰³ Stuart Appelbaum, interview by Brian Gridley, EVG 11, Feb. 22, 2002; Terry Rice, interview by Brian Gridley, Mar. 8, 2001.

The Feasibility Study Phase

The Water Resources Development Act of 1996 (P.L. 104–303) authorized the Corps to proceed with the development of a Comprehensive Everglades Restoration Plan (CERP) via a feasibility study.¹²⁰⁴ The WRDA established goals for the CERP, reiterating the concept that the primary goal was ecosystem restoration and that no cost/benefit analysis was required. The act established the principle that project construction and operating costs would be shared equally between the federal and state governments. It also mandated that nonfederal interests—the state of Florida and the two Florida tribes—be included in the process. The Corps wanted five or six years for the CERP feasibility study, but the administration mandated that the plan be presented to Congress by July 1, 1999. Clinton and Gore were determined to get the CERP passed as the crowning environmental achievement of their second term. In developing the CERP, Stuart Appelbaum’s restudy team identified alternatives, prioritized them, evaluated them, and established measures by which their success could be judged. Appelbaum created two subgroups: an alternative development group and an alternative evaluation group. To speed up the process, the results of modeling were placed on the web as PDF files to facilitate rapid review and comment. The restudy team, with about 150 members at its peak, worked intensively to meet the July 1999 deadline. The Corps initially asked that park scientists be detailed to the team. Superintendent Ring thought this inappropriate because the team’s decisions had such important policy implications. Park scientists offered input and raised concerns throughout the development of the feasibility study. In January 1998, for example, SFNRC Chief Robert Johnson told the *Miami Herald* that the Corps was relying too heavily on adding additional water control structures and was refusing to do modeling on some of the park’s preferred alternatives.¹²⁰⁵

Finding that the two groups created to develop and evaluate alternatives had worked well, the restudy team looked for a way to ensure that scientists would continue to have input, both while the CERP was developed and, crucially, as it was implemented. (Congress of course had not yet approved implementation, but the team was looking ahead). The desire for ongoing scientific input led to the formation of RECOVER, the REstoration, COordination, and VERification scientific advisory group. Stuart Appelbaum of the Corps and Biologist John Odgen of the SFWMD were the first co-leaders of RECOVER. RECOVER had members from a variety of agencies. Its role was and continues to be that of providing technical input on modeling and other issues, with the aim of helping to ensure that steps taken to implement CERP achieve the greatest environmental benefits. Further elaboration of

¹²⁰⁴ As described in Chapter 13, section 528 of the legislation also authorized additional studies, including the Florida Bay and Florida Keys Feasibility Study.

¹²⁰⁵ Godfrey, 330–31, 395; Richard Ring, interview by author, July 18, 2012; “Conflict in the Glades: Scientists, Engineers at Odds over Restoration,” *Miami Herald*, Jan. 4, 1998.

the functions and membership of RECOVER was included in the CERP Programmatic Regulations (see below).¹²⁰⁶

The development of the CERP depended heavily on the use of computer models. The models were used to predict the probable effects of the many variations of the CERP that were proposed and to come up with performance measures. The SFWMD had developed the first computer model for Everglades hydrology, known as the Natural System Model, in the late 1980s. This model replicated the conditions of the predrainage Everglades. A second model, the South Florida Water Management Model, replicated the system as modified by C&SF Project. These models focused on hydrology; both continued to be refined throughout the 1990s and were subjected to peer review. Another model, Across Trophic Landscape System Simulation (ATLSS) was developed to evaluate effects of various proposed modification of the system on multiple species. Members of the restudy team understood that models are by their nature simplifications of reality and needed to be carefully evaluated. The results obtained from modeling depended on the validity of the assumptions and data that produced the models.¹²⁰⁷

While the restudy effort continued, the Clinton/Gore administration was eager to show some visible progress on the Everglades. Vice President Gore was scheduled to be the major speaker at Everglades National Park's 50th anniversary celebration and rededication in early December 1997 (see Chapter 26). The Talisman Sugar Corporation, a subsidiary of the St. Joe Paper Company, had indicated a willingness to sell 52,000 acres of sugar property in the EAA. Conversion of EAA lands to reservoirs and filter marshes was emerging as a key feature in the restudy, and the 1996 Farm Bill had provided \$200 million for conservation-related land purchases. Urged on by the environmental community, the federal government worked out a deal with St. Joe and other EAA growers in time for Gore to triumphantly announce the Talisman deal at the rededication on December 6, 1997.¹²⁰⁸

The Corps released its draft CERP feasibility study for agency technical review in October 1998. The study included a mammoth ten-volume, 4,000-page technical plan. Everglades National Park's science team prepared forty-four pages of comments on the draft that were highly critical of the preferred CERP alternative. They believed that the plan focused primarily on water storage and supply for urban and agricultural users and that ecosystem benefits came largely at the tail end of the project and were highly

¹²⁰⁶ The late John Ogden told an interviewer that Appelbaum suggested that the group be called SWEAT, for System-wide Ecological Assessment Team. Finding SWEAT a less than compelling acronym, Ogden suggested RECOVER. John Ogden, interview by Brian Gridley, EVG 7, Apr. 10, 2001.

¹²⁰⁷ Corps and SFWMD, *Final Integrated Feasibility Report and Programmatic EIS, C&SF Project Comprehensive Review Study* (Jacksonville: Corps, Apr. 1999), xv-xvi; Michael Zimmerman, interview by Colleen Benoit and Mike Folkerts, Apr. 9, 2012.

¹²⁰⁸ Nathaniel P. Reed to Paul Tudor Jones, Nov. 17, 1997, NPR papers, box 6; "Gore, Other Dignitaries Help to Rededicate Park," Miami Herald, Dec. 7, 1997. See Godfrey, 410-12, for details of the Talisman deal.

uncertain. They concluded that the plan “does not represent a restoration scenario for the southern, central and northern Everglades.” The park had a December 31 deadline for forwarding its comments to the Corps. SFNRC Director Robert Johnson had deputy superintendent Larry Belli sign the cover letter for the comments on December 30 while Superintendent Ring was away from park headquarters. Park scientists had been raising these same concerns all along and Ring was familiar with their general tenor. Nevertheless, the superintendent felt the tone of the comments was overly negative. He attempted to soften the blow in a letter to the Corps emphasizing that the comments “are not the final position of Everglades National Park on the Restudy” and stressing that the NPS remained committed to the restudy process and stood ready to cooperate to arrive at a plan acceptable to all.¹²⁰⁹

Park staff shared their bluntly worded critique with representatives of conservation groups, and environmental consultant Joe Browder provided a copy to a *Miami Herald* reporter. A January 16 story in that paper caused quite a stir, alleging that the park officials had “ripped” the draft plan. Top officials in the DOI and the U.S. Army were not happy that the NPS and FWS were so critical of the plan and that the controversy had gone public. At the January 1999 Everglades Coalition meeting, EPA Administrator Browner urged environmentalists to unite behind the restoration plan. The Corps and DOI attempted to assure the environmental community that the concerns would be addressed. Within the environmental community, the National Audubon Society (NAS) and its Florida affiliate had emerged as the strongest supporters of the administration’s restoration efforts. Other groups, such as the Sierra Club and the Friends of the Everglades, were far less sanguine. With the help of Joe Browder, the Sierra Club got six natural scientists with international reputations to do a quick review of the feasibility study. Led by Stuart Pimm of the University of Tennessee, a biologist who specialized in endangered species, the team prepared a statement that blasted the plan and insisted it needed major revision.¹²¹⁰ Chief among its objections were that the plan lacked any real ecological restoration, that it relied too much on engineering fixes, and that the computer modeling underlying the plan was flawed. Pimm’s group recommended that the National Research Council review the plan. Here, the administration’s desire to get a consensus-based restoration plan through Congress before Clinton left office in January 2001 ran up against some scientists’ and environmentalists’ wish to proceed carefully toward a plan with maximum environmental benefits. Assistant Secretary Frampton believed that Pimm’s group was very high-powered but lacked in-depth knowledge of South Florida. Fearing that no plan would satisfy the most strident environmentalists, Frampton

¹²⁰⁹ Acting Supt., ENP, to Col. Joe Miller, District Commander, Jacksonville District, Corps, Dec. 30, 1998, transmitting Comments of ENP on the Programmatic EIS and Alternative D13R, EVER 42242; Robert Johnson, interview by author, Oct. 11, 2012.

¹²¹⁰ The other members of the team were Edward O. Wilson of Harvard; Paul Erlich of Stanford; Peter Raven, director of the Missouri Botanical Gardens; Gary Meffe of the University of Florida and editor of *Conservation Biology*; and Gordon Orians of the University of Washington.

continued to promote the consensus-based plan. Some environmental groups, notably the NAS and World Wildlife Fund, opposed further reviews that would delay action, but still pressed the administration to revise the plan.¹²¹¹

Stuart Appelbaum's team and administration officials worked in early 1999 to address criticism of the plan and hold together the fragile coalition of interests backing it. The team did some more modeling based on input from park scientists, which indicated that an additional 245,000 acre-feet of water per year might be available for the park. It was too late in the process to change the ten-volume technical plan, but Michael Davis, deputy assistant secretary of the army for civil works made sure the chief of engineer's report that accompanied the technical plan make concessions to the park's point of view.¹²¹² It was clear to everyone that Congress was unlikely to back a restoration plan if the park had strong objections. Superintendent Ring used this to maximum advantage, threatening to oppose the plan if he believed it did not do enough for the park.¹²¹³ The chief's report included language that promised an additional 245,000 acre-feet of water per year to the park. The perception that the park was getting special treatment after a consensus had been reached was upsetting to many, the Miccosukee in particular. Nonetheless, on July 1, 1999, Vice President Gore personally delivered the feasibility study and chief's report to Congress with a strong plea for its enactment into law. Restoration advocates got the jitters when a conservative, Bob Smith (R-N.H.), replaced conservation-minded moderate John Chaffee (R-R.I.) as chair of the Senate Environment and Public Works Committee in October. Smith held committee hearings in Naples in conjunction with the January 2000 meeting of Everglades Coalition and committed himself to CERP. He announced "you will not find daylight" between him and Chafee on Everglades issues.¹²¹⁴

¹²¹¹ Joe Browder, interview by Nancy Russell, Dec. 7, 1999; "Park Attacks Plan to Restore Glades," *Miami Herald*, Jan. 16, 1999; "Sierra Club: Glades Restoration Plan Needs Review," *Miami Herald*, Jan. 23, 1999; "Big Ecological Guns Fault Plan for Everglades," *Miami Herald*, Jan. 30, 1999; The Everglades Foundation, National and Florida Audubon Societies, World Wildlife Fund, The Conservancy of Southwest Florida, and the National and Florida Wildlife Federations to Vice President Albert Gore, Feb. 2, 1999, NPR papers, box 8; Frampton interview.

¹²¹² Typically the chief's report was a two- to three-page document that formally transmitted a report to Congress, but in the case of CERP it was twenty-seven pages and more substantive. Terry Rice, interview by Brian Gridley, Mar. 8, 2001.

¹²¹³ Grunwald, 326–27.

¹²¹⁴ Corps and SFWMD, *Central and South Florida Project, Comprehensive Review Study, Final Integrated Feasibility Report and Programmatic EIS* (Jacksonville: Corps, Apr. 1999); Stuart Appelbaum, interview by Brian Gridley, EVG 11, Feb. 22, 2002; Godfrey, 414.

Final Passage of the CERP

In April, the administration sent the 2000 Water Resources Development Act, with CERP as its centerpiece, to Congress.¹²¹⁵ The state of Florida maintained its strong commitment to the plan. In May 2000, Governor Jeb Bush traveled to Everglades National Park and signed the state's Everglades Restoration and Investment Act at Royal Palm. The act committed the state to spending \$2 billion over ten years to restore the Everglades ecosystem. This was clearly meant to show that the state was serious about the project. As *Miami Herald* columnist Carl Hiassen wrote, "the governor's stance is important because it puts pressure on Congress" to do its part and pass the CERP.¹²¹⁶

Controversy continued to swirl around the CERP as it made its way through Congress. Chairman Smith asked for an opinion on water quality issues from the Government Accounting Office (GAO). The GAO noted that the CERP was far more conceptual than the typical Corps plan and might require additional projects not included in the feasibility study. Senators Smith, Graham, and Connie Mack (R-FL) worked hard to keep agricultural, urban, and environmental interests behind the plan. To prevent business interests from bolting, the law specified that nothing in the Chief's Report (notably the 245,000 acre-feet of water for the park) would go forward without further study by the Corps. To appease environmentalists, the law specified that ecosystem restoration was the primary purpose of the act. The Senate report accompanying the bill contained language suggesting that 80 percent of the added water generated by the plan would go "for the benefit of natural systems." The House threatened to derail the process by adding half a billion dollars of additional projects to the WRDA. This forced the bill to go to a conference committee, which removed the House additions. The final version of the bill passed Senate on a voice vote and the House by 312 to 2. President Clinton signed the bill on December 11, 2000, the same day that the U.S. Supreme Court stopped the recount in Florida, assuring that George W. Bush, rather than Al Gore, would be the next president.¹²¹⁷

The WRDA of 2000 proclaimed "the overarching objective of the Plan [CERP] is the restoration, preservation, and protection of the South Florida Ecosystem while providing for other water-related needs of the region." (Figure 28-4, Metropolitan Miami, a large consumer of water.) Significantly, the South Florida Ecosystem was defined by the act as all the land and water within the SFWMD. The plan contained sixty-eight separate projects with a total estimated price tag of \$7.8 billion. Annual operating costs were

¹²¹⁵ The committee hearings were held in Naples on Jan. 7, 2000.

¹²¹⁶ "Florida Commits to Everglades," *Miami Herald*, May 17, 2000; Carl Hiassen, "A Contentious, Expensive Plumbing Job," *Miami Herald*, May 21, 2000.

¹²¹⁷ "House Approves Plan to Restore Everglades," *New York Times*, Nov. 4, 2000; "Glades Get New Life, Congress Approves \$7.8 Billion Renewal Plan," *Miami Herald*, Nov. 4, 2000; Godfrey, 415.

placed at \$172 million. As mentioned above, both construction and operating costs were to be split equally between the state and the federal governments. Completion of all the projects was expected to require thirty-five years. The act identified ten initial construction projects expected to “provide the most immediate system-wide improvements in water quantity, quality and flow distribution.” Among the major elements of CERP were:

- 180,000 acres of surface water storage reservoirs;
- more than 300 aquifer storage and recovery (ASR) wells that could accept and store up to 1.6 billion gallons per day;
- 35,000 additional acres of stormwater treatment areas;
- removal of 240 miles of internal levees and canals, including most of the Miami Canal within WCA 3;
- rebuilding of twenty miles of the Tamiami Trail with bridges and culverts allowing more natural flow into Everglades National Park;
- conversion of limestone quarries to water storage reservoirs;
- two wastewater treatment plants in Miami-Dade County with the ability to cleanse water for discharge into wetlands; and
- seepage barriers along eastern edge of park.¹²¹⁸



Figure 28–4, Metropolitan Miami, a large consumer of water.

Congress made sure that it would continue to be involved in CERP implementation, stipulating that each project would have to be congressionally approved via a project implementation report, before any funds were appropriated.¹²¹⁹

¹²¹⁸ Title VI—Comprehensive Everglades Restoration, Water Resources Development Act of 2000, P. L. 106–541, Dec. 11, 2000. Hereafter WRDA 2000.

¹²¹⁹ Section 601(f)(1) of WRDA 2000.

As was clear to the members of the restudy team, a great deal of uncertainty was involved in the attempt to restore a complex ecosystem like the Everglades. The CERP's approach to managing uncertainty had three major components: pilot projects, adaptive management strategies, and peer review. Many questions remained about the application of a number of the technologies employed in CERP projects. Aquifer storage and recovery (ASR) wells, for example, had never been attempted at the scale called for in CERP. In recognition of the technological uncertainties, the CERP authorized pilot projects meant to test the technology in four key areas: ASR, in-ground reservoirs, seepage management, and wastewater reuse.¹²²⁰

The CERP contained “an aggressive adaptive assessment strategy that includes independent peer review and a process for identifying and resolving uncertainties.” Congress wanted to be sure that, as conditions changed and experience was gained, managers would have the ability to change aspects of projects, cancel projects, and add new ones. The CERP and the regulations that implemented it were meant to ensure that the success of projects would be measured against performance criteria and adjustments made as the plan moved forward.¹²²¹

Part of the adaptive management framework outlined in the 2000 WRDA was an independent scientific panel to review CERP progress. The panel was to be established by the Corps, Interior, and the state of Florida, in consultation with the Task Force. The act suggested that the National Academy of Sciences (NASc) or a similarly prestigious body coordinate the formation and work of the panel.¹²²² The sole mission of the panel was to “review progress in meeting natural system restoration goals,” including the “assessment of ecological indicators and other measures of progress in restoring the ecology of the natural system.”

Prior to the passage of CERP, the DOI already had asked the NASc “to provide advice on scientific aspects of the design and implementation of CERP.” This led to the formation of the National Research Council Committee on the Restoration of the Greater Everglades Ecosystem (CROGEE). CROGEE's mandate included reviewing CERP's goals, the computer models used in its preparation, research requirements, and adaptive management strategies. CROGEE produced several reports including *Aquifer Storage and Recovery in*

¹²²⁰ Title VI—Comprehensive Everglades Restoration, WRDA 2000.

¹²²¹ Title VI—Comprehensive Everglades Restoration, WRDA 2000; *Final Integrated Feasibility Report and Programmatic Environmental Impact Statement, C&SF Project Comprehensive Review Study*, Apr. 1999.

¹²²² The National Academy of Sciences along with the National Research Council, the National Academy of Engineering, and the Institute of Medicine make up the National Academies. All four are nonprofit corporations that provide independent expertise.

*the Comprehensive Everglades Restoration Plan (2001) and Adaptive Monitoring and Assessment for the Comprehensive Everglades Restoration Plan (2003).*¹²²³

The 2000 WRDA specifically required that the independent review panel for CERP produce a biennial report that would go to Congress, the Department of the Army, DOI, and the governor of Florida. In June 2004, the Secretary of the Army concluded a cooperative agreement with the NASc to implement the review panel, the Committee on Independent Scientific Review of Everglades Restoration Progress (CISRERP). The NASc had the authority, with input from the U.S. Army, DOI, and the state of Florida, to appoint members to this “expert and objective” panel. The agreement had a term of five years and could be renewed. A number of well-respected scientists have served on the CISRERP. Wayne C. Huber, PhD, Civil Engineering, of Oregon State University, was the committee’s first chair. CISRERP produced reports in 2006, 2008, and 2010, and 2012. These reports have consistently highlighted the lack of progress on restoration goals and observed that projects undertaken so far have been on the periphery of the Everglades ecosystem. The 2014 report was not released in time to be included in this history.¹²²⁴

Implementation of the CERP

Several individuals who helped to develop the CERP clearly understood that maintaining momentum for it over the required three to four decades would be a challenge. The coalition of environmental groups, governmental agencies, and agricultural and urban interests that had secured the plan’s passage was a tenuous one. Many environmentalists had serious qualms about putting the Corps, which was largely responsible for the damage to the ecosystem, in charge of the restoration. They wanted the Department of the Interior to have that role.¹²²⁵ Some environmentalists also believed that water quality issues had been neglected in the CERP. Although Congress intended that the Department of Interior be intimately involved in the implementation of CERP, much would depend on the attitude of future administrations and Congresses. CERP passed at the tail end of the Clinton/Gore administration, and the commitment of the incoming George W. Bush administration to CERP was uncertain. Environmentalists were not encouraged by Bush’s appointment of Gale Norton as secretary of the interior.¹²²⁶ Perhaps the most encouraging aspect of the politics of

¹²²³ See National Academies Press, <http://search.nap.edu/napsearch.php?term=crogee&x=15&y=13>.

¹²²⁴ U.S. Army Corps of Engineers, Everglades restoration website, http://www.evergladesplan.org/news/features/070212_cerp_review.aspx; Cooperative Agreement W912EP-04-2-0001 between the National Academy of Science/National Research Council and the U.S. Army Corps of Engineers, June 17, 2004, http://www.evergladesplan.org/pm/pm_docs/ind_rev_panel/doc_b_cano_W912EP-04-2-0001.pdf.

¹²²⁵ See A. Clark and G. Dalrymple. “\$7.8 Billion for Everglades Restoration: Why Do Environmentalists Look So Worried?,” *Population and Environment* 24, no. 6 (2003):541–69.

¹²²⁶ Norton had been an attorney with James Watt’s Mountain States Legal Foundation and had served under him in the DOI in the Reagan administration. “Gale Norton is No James Watt: She’s Even Worse,” *Los Angeles Times*, Jan. 9, 2001.

Everglades restoration was that the 2000 election had shown that many Florida voters cared about environmental issues.¹²²⁷

Once the CERP became law, several years were required to put in place an administrative process that would allow the huge, complex plan, involving multiple players, to move forward. In June 2001, President Bush joined his brother, Governor Jeb Bush, at Royal Palm in Everglades National Park to pledge his commitment to Everglades restoration and burnish his credentials as an environmentalist. He stated “I am here to join with your governor in the cause of preserving and protecting the Everglades.” The president reaffirmed the commitment of the federal government to supply one-half of the restoration cost.¹²²⁸ In January 2002, as required by the 2000 WRDA, the president and his brother signed a legally binding agreement assuring that additional water provided by the CERP would not go to other users unless sufficient benefits had accrued first to the ecosystem.¹²²⁹ The 2000 act had also directed the Corps to prepare programmatic regulations that would serve to ensure the accomplishment of CERP’s goals. Congress mandated that the governor of Florida and the SOI concur in the regulations. The Corps circulated an initial draft of the regulations dated December 2001 for comments. The DOI accomplished several changes to the initial version that enhanced its role in the restoration process.¹²³⁰ The draft, for example, provided that the Corps and SFWMD would consult with Interior and others on CERP implementation only “as appropriate,” a qualifier that was dropped in the final version. The final version also stipulated that the SOI and the governor of Florida would have to concur on the “pre-CERP baseline,” defined as the South Florida hydrological conditions prevailing as of the 2000 enactment of CERP. The initial version had left this important decision to the Corps and SFWMD. Surprisingly, the initial draft lacked a definition of “restoration.” The final regulations defined restoration as:

The recovery and protection of the South Florida ecosystem so that it once again achieves and sustains those essential hydrological and biological characteristics that defined the undisturbed Florida ecosystem. As authorized by Congress, the restored Florida ecosystem will be significantly healthier than the current system; however it

¹²²⁷ Some have argued that his refusal to take a stand on the proposal for a redeveloping Homestead Air Force Base as a commercial airport cost Gore Florida’s electoral votes in the 2000 election. See Mayr, *Everglades Betrayal: The Issue That Defeated Al Gore*.

¹²²⁸ The president also used the occasion to announce his nomination of Fran Maniella, director of Florida’s state park system, as director of the NPS. White House Office of the Press Secretary, “Remarks by the President at Royal Palm Visitors [sic] Center, June 4, 2001”; “Mixed Reaction to Bush Visit,” *Miami Herald*, June 5, 2001.

¹²²⁹ This pact is officially known as Comprehensive Everglades Restoration Plan Assurance of Project Benefits Agreement, dated Jan. 9, 2002.

¹²³⁰ Corps, *CERP Programmatic Regulations, Initial Draft*, December 2001, http://www.evergladesplan.org/pm/pm_docs/prog_regulations/initial_draft_reg.pdf. Compare draft 385.15 with final, 385.10(b)(2) and draft 385.30 with final, 385.35. Michael Davis came up with the ideas of programmatic regulations. Michael Davis, interview by Brian Gridley Mar. 2, 2002.

The Corps published a revised version of the programmatic regulations as a proposed rule in the Federal Register in August 2002. Interior had only a few technical changes to suggest, and the final regulations, running to forty-six pages in the Code of Federal Regulations, were published in November 2003.¹²³¹

The stated purpose of the programmatic regulations was to “establish the processes necessary for implementing” the CERP and achieving its goals. Certain procedures and plan-related documents had been required by the 2000 WRDA. The act stated that no individual project could go forward until Congress had approved a project implementation report (PIR). The act further stated that each project would require a project cooperation agreement and an operating manual agreed to by the Corps and the SFWMD. The project process was further elaborated by the programmatic regulations, which defined the need for and role of guidance memoranda, program management plans, and project management plans. To address issues common to multiple CERP projects, the Corps and the SFWMD opted to prepare a master cooperative agreement to establish a framework of uniform terms and conditions for all projects. Because of the complexities involved, the discussions concerning this agreement were prolonged, and it was not signed until 2009. With the master agreement in place, the Corps and the district were able to proceed to the preparation of project partnership agreements for individual projects. The programmatic regulations stipulated that the Corps and the SFWMD “shall consult with and seek advice from the Department of the Interior [and other agencies] throughout the implementation process to ensure meaningful and timely input.” Finally, the programmatic regulations were to be reviewed at least every five years and revised as needed.¹²³²

¹²³¹ Comprehensive Everglades Restoration Plan Assurance of Project Benefits Agreement, Jan. 9, 2002; “Bush Brothers Agree to Plan for Everglades,” *Los Angeles Times*, Jan. 10, 2002; Godfrey, 293–94; 33 C.F.R. 385; Terrence Salt, Senior Everglades Policy Advisor, DOI, to Col. Greg May, District Engineer, Oct. 1, 2002.

¹²³² 33 C.F.R. 385.1, 385.10(b)(2); Master Agreement between the Department of the Army and SFWMD for Cooperation in Constructing and Operating, Maintaining, Repairing, Replacing, and Rehabilitating Projects Authorized to be Undertaken Pursuant to the CERP, Aug. 13, 2009.

The National Science Foundation's Long-Term Ecological Research Program

Research sponsored by the National Science Foundation (NSF) has and will in the future be of major importance to the CERP. In 1980, the NSF created the Long-Term Ecological Research (LTER) network to support ecological research requiring long time spans and large spatial extents. The program involves a coordinated network of more than twenty-five field sites. One of these sites is the Florida Coastal Everglades LTER (FCE LTER), established in May 2000 and hosted by Florida International University. FCE LTER includes 140 people—scientists, students, and staff—working to better understand the ecosystem processes in the park's two major drainage basins, Shark River Slough and Taylor Slough. The project's research program includes an emphasis on the human dimensions of ecological systems. In particular, this involves investigating the social and economic processes that drive land use change and how these changes affect human communities. Some scholars associated with the FCE LTER see their research as a counterweight to the natural-systems-only bias that seems to have characterized Everglades restoration efforts.¹²³³

Effects of the Recession

While these procedural issues were being resolved, the economic and political environment of the United States changed dramatically. The Al Qaeda-sponsored attacks of September 11, 2001, were followed by U.S. wars in Afghanistan and Iraq. In 2001 and 2003, the George W. Bush administration passed major tax-cutting legislation. The combination of increased spending and reduced tax revenues turned federal budget surpluses into deficits. Through a combination of changed spending priorities and lack of a strong push from President Bush, Congress from 2001 through 2006 appropriated little for the implementation of CERP. In addition, the Florida senators who did so much to get CERP enacted both retired, Connie Mack in January 2001 and Bob Graham in January 2005. Then in fall 2008, the international financial system came within a hair's breadth of collapsing. The worst U.S. economic recession since the 1930s ensued, further reducing tax revenues at the state and federal levels. The recession and funding decisions by Florida Governor Rick Scott (inaugurated January 2011) limited the financial resources available to the SFWMD for moving forward with CERP.

From 1999 through 2006, federal appropriations for all Everglades projects (both CERP and non-CERP) came to \$2.3 billion, while the state of Florida spent \$4.8 billion. Frustrated with the slow progress on Everglades restoration, Governor Jeb Bush and SFWMD Executive Director Henry Dean in 2004 came up with a measure known as

¹²³³ National Science Foundation website, http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13449; Florida Coastal Everglades Long-Term Ecological Research website, <http://fcelter.fiu.edu/research/>; Melissa Memory, personal communication, June 26, 2013.

Acceler8. Under this program, the state allocated \$1.5 billion to give a boost to eight lagging CERP projects. Most of these projects focused on improving water storage in the upper Everglades and thus reducing the amount of fresh water flushed to the St. Lucie and Caloosahatchee estuaries. Three of the projects, however, had more tangible benefits for NPS areas: the C-111 spreader canal, the Picayune Strand (Southern Golden Gates) Restoration, and the Biscayne Bay Coastal Wetlands Project. The C-111 spreader canal is discussed above. The Picayune Strand Restoration involved the removal of the canal and road infrastructure from a large abandoned subdivision west of the Big Cypress National Preserve. The Biscayne Bay project involved restoring more natural water flows to Biscayne Bay and Biscayne National Park. Completion of the project was expected to improve salinity distribution near the shoreline, providing better habitat for marine species. The state had grown impatient with delays at the federal level and sought through Acceler8 to achieve considerable progress on CERP within six years. As former assistant secretary for fish and wildlife George Frampton pointed out at the time, the eight projects had been authorized by the 2000 WRDA but not federally funded.¹²³⁴

Charlie Crist, who succeeded Jeb Bush as governor in January 2007, took Everglades restoration in a new direction. In June 2008, the governor unveiled a tentative agreement under which the state would buy out U.S. Sugar Corporation and wind up its operations in the EAA. The aim was to devote former agricultural land to water storage and treatment areas, enhancing north to south flow within the Everglades ecosystem. The initial deal called for the state to pay the company \$1.75 billion for 187,000 acres in the EAA and all of its buildings and equipment. Environmentalists were split on this move, with some seeing it as bailing out U.S. Sugar before soils in the EAA were depleted and could no longer support agriculture. Others saw the deal as diverting attention and funds from more important CERP projects. Florida's contracting economy soon forced the deal to be scaled back. In November 2008, the company's infrastructure assets were removed from the deal, which was restated as \$1.34 billion for 181,000 acres. In April 2009, the state announced that the deal had shrunk to 72,800 acres for \$536 million. When the deal closed in October 2010, the state could afford to acquire just 26,800 acres for \$197 million. Two large tracts were involved: 17,900 acres of citrus land in Hendry County and 8,900 acres of sugar cane land in Palm Beach County. The state also retained a ten-year option to purchase an additional 153,000 acres. The ultimate use of the lands acquired as either water reservoirs or stormwater treatment areas has not yet been decided.¹²³⁵

¹²³⁴ Tom Swihart, *Florida's Water: A Fragile Resource in a Vulnerable State* (New York: RFF Press, 2011), 133; SFWMD, "Acceler8—An Overview, Oct. 2010, EVER 22965; "Two Bushes and the Everglades," *New York Times*, Nov. 10, 2004; Godfrey, 297–98; Environmental News Service, October 15, 2004, <http://www.ens-newswire.com/ens/oct2004/2004-10-15-10.html> .

¹²³⁵ "Florida Buying Big Sugar Tract for Everglades," *New York Times*, June 25, 2008; "Everglades Deal Now Only Land, Not Assets," *New York Times*, Nov. 11, 2008; "Deal to Save Everglades May Help Sugar Firm," *New York Times*, Mar. 8, 2010; "Everglades Land is Finally Sold to State," *Jacksonville Times-Union*, Oct. 13, 2010; Godfrey, 302; *Progress*, 2014, 26.

Following the enactment of the CERP in 2000, Congress passed just two water resources development acts, in 2007 and 2014. This delay deprived the CERP of authorization and funding to proceed with needed projects. The 2007 act was passed over President Bush's veto and included a \$1.8 billion authorization for three CERP projects:

1. Picayune Strand, for environmental restoration, total cost \$375,330,000, with estimated federal share of \$187,420,000;
2. Indian River Lagoon, South, for ecosystem restoration, water supply, flood damage reduction, and protection of water, total cost \$1.365 billion, with estimated federal share of \$682.5 million; and
3. Site 1 Impoundment, for environmental restoration, total cost \$80,840,000, with estimated federal share of \$40,420,000.

These projects, known as Generation 1 projects, are all on the periphery of the Everglades ecosystem, and it would be hard to find a scientist who believed they were high-priority endeavors in the bigger picture of Everglades restoration. Picayune Strand authorization allowed further progress on the project previously funded by the state under Acceler8. The Indian River Lagoon, South, project is a major effort to restore salinity conditions and water quality in the Indian River Lagoon and St. Lucie Estuary. The Site 1 Impoundment Project in Palm Beach County is designed to reduce water losses through seepage from the adjacent Arthur R. Marshall Loxahatchee National Wildlife Refuge, thus increasing the amount of water in the natural system.

President Obama's economic stimulus program, enacted in early 2009 as the American Recovery and Reinvestment Act (ARRA) provided \$200 million for Everglades projects. Projects funded by ARRA (both CERP and foundation) included Kissimmee River restoration, Picayune Strand, Site 1 Impoundment, and adaptive assessment and monitoring. Also funded was a Melaleuca and Other Exotic Plants Eradication Project.¹²³⁶

Litigation over Everglades water quality, begun in 1988, was ongoing in the first decades of the twenty-first century. With strong support from sugar interests, the Florida legislature in 2003 amended the 1994 Everglades Forever Act. This act renamed the Everglades SWIM Plan the "Everglades Long-Term Plan." It once again extended, to 2016, the deadline for meeting numerical phosphorous concentrations and stated that the Everglades Long-Term Plan "shall, to the maximum extent practicable, achieve water quality standards." The extension of the deadline and use of the term "maximum extent practicable" were seen by many as weakening the state's commitment to cleaning up

¹²³⁶ Section 6004, Water Resources Development Act of 2007, Nov. 8, 2007, P. L. 110-114; American Recovery and Reinvestment Act, Feb. 17, 2009, P. L. 111-5; Corps and DOI, *2010 CERP Report to Congress* (Washington, DC, Corps, Apr. 2011), 26, http://www.evergladesplan.org/pm/pm_docs rtc_2010/rtc_2010_final.pdf; *Progress*, 2014, 59.

Everglades water. Under the pressure of a lawsuit by the Miccosukee Tribe, the U.S. EPA in September 2010 ordered the state of Florida to take actions that would reduce the phosphorous concentration to ten parts per billion in water discharged to the Everglades Protection Area. The Everglades Protection Area is defined as Everglades National Park, the Arthur R. Marshall Loxahatchee Wildlife Refuge, and the WCAs. In June 2012, the state came up with a Restoration Strategies Regional Water Quality Plan that the EPA and the federal court accepted. The plan calls for the state to create 6,500 acres of additional stormwater treatment areas. Implementing the plan requires substantial expenditures by the SFWMD, limiting its ability to fund CERP projects.¹²³⁷

General frustration with the slow pace of Everglades restoration led the Corps and the SFWMD, in consultation with the state of Florida and DOI, in October 2011 to launch a new initiative: the Central Everglades Planning Project (CEPP). Based on the growing concern that the core of the Everglades was continuing to deteriorate despite the CERP, the CEPP is meant to provide a more expedited path to a more natural sheetflow pattern in the central Everglades and to increase the amount of freshwater flow. Components of the CEPP include projects that have been talked about for decades. These include controlling seepage from the EAA into the water conservation areas, degrading levees including those separating WCA 3A and 3B, and removing the L-67 Extension Canal and Levee that extends into the park. The estimated CEPP price tag is \$1.8 billion. Recognizing that environmental conditions in the central Everglades continued to deteriorate, the Corps expedited its planning process for the CEPP. The Corps released a draft Integrated Project Implementation Report and Environmental Impact Statement with a tentatively selected alternative for CEPP in 2013. As of this writing, the Corps has received approval to forward the report for review by the state of Florida and other federal agencies.¹²³⁸

¹²³⁷ Florida Statutes 2003, Everglades Forever Act, Ch. 2003–12; Godfrey, 297, 304; *Progress*, 2014, 26.

¹²³⁸ USACE, Jacksonville District, *Central Everglades Planning Project Draft Integrated Project Implementation Report and Environmental Impact Statement* (Jacksonville, FL: USACE, August 2013), ES-2-ES-6; USACE, Jacksonville District, “Corps Approves Release of Final Report for Central Everglades Project,” May 23, 2014, http://www.evergladesplan.org/docs/2014/05/20140523_CEPPE-Notice.pdf.

On June 10, 2014, President Obama signed the Water Resources Reform and Development Act (WRRDA). This act authorized four CERP projects. It had been hoped that some CEPP projects would be included, but the project report was not approved in time. Four new projects in the WRRDA were:

1. The C-43 West Basin Storage Reservoir, meant to hold water in the Caloosahatchee River basin;
2. The C-111 Spreader Canal, adding federal support to the existing state project.
3. Biscayne Bay Coastal Wetlands, partially funded by Acceler8; and
4. Broward County Water Preserve Area, meant to capture and store surface water run-off.¹²³⁹

Restoration Status and Prospects

The National Research Council released its fifth biennial report to Congress on Everglades restoration progress on June 27, 2014. It noted some impressive achievements, while acknowledging “increasingly frustrating financial, procedural, and policy constraints” that stunted progress. To begin with, the ultimate cost of the CERP is now projected at more than \$14 billion, and government coffers are still feeling the effects of the recession. The NRC team complimented the Corps and its partners on the rapid development of the CEPP report but cautioned that project implementation needed to be equally rapid. It also remarked upon the notable success of a non-CERP restoration project, Kissimmee River dechannelization, where more than 15,000 acres of riverine habitat have been restored. The adoption of best management practices and the construction of stormwater treatment areas have accomplished a substantial reduction in nutrient loads in water entering the Everglades Protection Area. Much remains to be done, however, to meet the EPA-mandated target of ten parts per billion. The bridging of the Tamiami Trail, mentioned previously, is another positive, but its ultimate success depends on ensuring that the water delivered to the park is clean. Some four miles of the nine-mile L-67 extension levee in the park have been eliminated. Aquifer Storage and Recovery pilot projects, involving cycle testing and monitoring, have been started at the Kissimmee River and Hillsboro Canal. It remains to be seen whether this innovative technology will deliver the hoped-for results.¹²⁴⁰

¹²³⁹ Water Resources Reform and Development Act of 2014, P.L. 113–449, June 10, 2014; *Progress*, 2014, 60; USACE, Caloosahatchee River (C-43) West Basin Storage Reservoir Fact Sheet, July 2013, http://www.evergladesplan.org/docs/fs_c43_july_2013_508.pdf; USACE website, <http://www.saj.usace.army.mil/Media/FactSheets/tabid/6073/Article/479986/broward-county-water-preserve-areas.aspx>.

¹²⁴⁰ *Progress*, 2014, 57–58, 93, 101–102; *2010 CERP Report to Congress*, v, viii; “Dramatic Spread of Cattails Chewing Up River of Grass,” *Miami Herald*, Feb. 7, 2000.

Successful restoration has been defined as reestablishing the “defining characteristics of the original Everglades,” albeit in a natural Everglades system that is considerably smaller than the predrainage Everglades. The cited defining characteristics are sheetflow, low nutrient levels in freshwater wetlands, healthy productive estuaries, resilient plant communities, and abundant populations of native wetland animals. Substantial obstacles to reestablishing these characteristics remain. As scientists learn more about the historical Everglades ecosystem, it is apparent that plant communities in particular locations have changed over time. This raises questions about just what the target characteristics of a restored system should be. Adaptive management is a key component of the CERP, designed to give managers flexibility to alter projects as needed. Considerable uncertainties arise in applying adaptive management concepts to civil engineering works that cost hundreds of millions of dollars and require many years to build. As nimble and flexible as engineers and scientists try to be, there are limits to the kind of midcourse corrections to CERP projects that can be accomplished. Curtis J. Richardson, professor of resource ecology at Duke University, has proclaimed that “the Everglades is the sentinel wetland for the world. If we cannot get this restoration right with all our money, engineering technology, environmental laws, and ecological knowledge, then the future of wetlands worldwide is endangered.” Much is riding on the success of the CERP. If it is widely viewed as a failure, it seems unlikely that U.S. politicians will again support a major ecosystem restoration project anywhere else.¹²⁴¹ The future health of Everglades National Park is in the balance (figure 28–5, sunset over Florida Bay).



Figure 28–5, sunset over Florida Bay

¹²⁴¹ 2010 CERP Report to Congress, 3; Curtis J. Richardson, *The Everglades Experiments: Lessons for Ecosystem Restoration* (New York: Springer, 2008), 641; Michael Grunwald, “A Rescue Plan, Bold and Uncertain,” *Washington Post*, June 22, 2002.



**Wilderness on the Edge:
A History of Everglades National Park**

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A Note on Sources

This history relies predominantly on primary sources. Information for the archival collections and oral history interviews relied upon appears below. The secondary literature on the Everglades is vast, and an attempt to include all secondary sources in this bibliography would make it unwieldy. The bibliography includes all secondary source relied upon by the author. Of the hundreds of scientific papers on Everglades topics, only those relevant to the park's history and development are included. Many papers published by the NPS's South Florida Natural Resource Center are available online at: <http://www.nps.gov/ever/naturescience/sfnrcpublications.htm>. Omitted in the bibliography are most articles and books that focus chiefly on the recreational opportunities in Everglades National Park, children's literature, and novels with a setting in Everglades National Park. I have made use of a number of articles published in *Tequesta*, the journal of the Historical Association of Southern Florida. All *Tequesta* articles published since 1941 are available online at: <http://digitalcollections.fiu.edu/tequesta/index.htm>.

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 Redford, Polly
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 rock plowing
 Rocky Glades
 Rod & Gun Club, Everglades City
 Rogers, Paul
 Rogers River
 Roheno, Navidad "Tito"
 Romans, Bernard
 Rookery Branch
 Rookery Mound (archeological site)
 Roosevelt, Franklin D.
 Roosevelt, Theodore
 roseate spoonbill
 Rosendahl, Pete
 Ros-Lehtinen, Ileana
 Rothenberg tract
 Rottenberg Tracts
 Royal Palm deer feeding station
 Royal Palm Hammock
 Royal Palm Lodge
 Royal Palm State Park
 Royal Palm Visitor Center
 royal palms
 Russell, Nancy

Safe Progress Association
 Safford, Edwin
 Saint Augustine, Florida
 Saint Johns River
 Saint Lucie Canal
 Salamanca, Liliana

Salazar, Kenneth
 Salt, Terrence "Rock"
 San Carlos Bay
 Sandfly Island
 Sandy Key
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 Schmidt, Tom
 Schmidt, William
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 Scott, Alan
 Scott, Paul R.
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 sea grass
 Sears, William
 sea trout
 Sellars, Richard
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 origins to the north of Florida
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 Table Top Key
 Talisman Sugar Corporation
 Tall Timbers Research Station
 Tamiami Canal
 Tamiami Trail
 construction
 environmental effects
 raising of a portion
 Tanner, Henry S.
 Tarpon Basin
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 Thornburgh, Richard
 Tiger, Buffalo
 Tiger, Jim
 Tigertail Camp
 Tilmant, James
 Timucua people
 Toll, Roger W.
 Tolson, Hillary
 tomato and vegetable cultivation
 Tommy, Jimmie
 Tortugas Natural Reserve
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 Trail Indians
 Trammell, Park
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 Watt, James
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 West Lake
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 Wheelock, W. D.
 White, Carroll
 White, Frank H.
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 white-tailed deer
 Whitewater Bay
 Whitfield, Estus
 Wickman, Patricia
 Wilbur, Ray Lyman
 Wilcox, J. Mark
 wild cotton
 wild turkey
 wilderness
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 Withlacoochee River
 Wood, Nat
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 Yamasee War
 Yard, Robert Sterling
 Youth Conservation Corps (YCC)
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Appendices

Appendix A: Legislation

Appendix B: Park Visitation via Main Entrance and Shark Valley

Appendix C: Budgets

Appendix D: Superintendents and Deputy/Assistant Superintendents

Appendix E: Chronology

Appendix F: Capsule Biographies

Appendix A: Federal Legislation

1. Act directing the NPS to investigate the Everglades area as a possible national park. Enacted March 1, 1929, P. L. 70-897.
2. Act authorizing Everglades National Park. Enacted May 30, 1934, P. L. 73-267.
3. Act allowing expenditure of federal funds for park administration and protection. Enacted August 21, 1937, P. L. 75-336.
4. Act allowing acceptance of land subject to reserved mineral rights. Enacted December 6, 1944, P. L. 78-463.
5. Act authorizing federal use of \$2 million appropriated by the state for land acquisition. Enacted October 10, 1949, P. L. 81-340.
6. Act establishing a new park boundary. Enacted July 2, 1958, P. L. 85-482.
7. Act authorizing transfer of funds to the Farmers Home Administration to make the foreclosed Iori Farms tract part of the park. Enacted September 12, 1964, P. L. 88-588.
8. Section 2 of the River Basin Monetary Authorization and Miscellaneous Civil Works Amendments Act of 1970 guaranteeing water deliveries to Everglades National Park. Enacted June 19, 1970, P. L. 91-282.
9. Section 401(3) of the National Parks and Recreation Act of 1978, designating wilderness areas in the park. Enacted November 10, 1978, P. L. 95-625.
10. Everglades National Park Protection and Expansion Act of 1989. Enacted December 13, 1989, P. L. 101-229.
11. Section 309(I) of the Water Resources Development Act of 1992 authorizing the Corps of Engineers to review the Central & Southern Florida Project. Enacted October 31, 1992, P. L. 102-580.
12. Amendment to 1989 act allowing NPS funds to be used for buying property in the East Everglades. Enacted March 9, 1994, P. L. 103-219

13. Section 528 of the Water Resources Development Act of 1996 directing the Corps of Engineers to complete the feasibility phase of the review of the Central & Southern Florida Project by July 1, 1999. Enacted October 12, 1996, P. L. 104-303.
14. Marjory Stoneman Douglas Wilderness and Ernest F. Coe Visitor Center Designation Act. Enacted November 13, 1997, P. L. 105-82.
15. Miccosukee Reserved Area Act. Enacted October 30, 1998, P. L. 105-313
16. Title VI of the Water Resources Development Act of 2000 authorizing the Comprehensive Everglades Restoration Plan. Enacted December 11, 2000, P. L. 106-541.
17. An Act to Authorize the Exchange of Certain Land in Everglades National Park, December 23, 2004, P. L. 108-483.
18. Section 7107 of the Omnibus Public Land Management Act of 2009, authorizing the NPS to enter into an exchange of certain lands with the Florida Power & Light Company. Enacted March 30, 2009, P. L. 111-11

Appendix B: Park Visitation via Main Entrance and Shark Valley

Year	Visitors	Year	Visitors
1948	7,482 ¹²⁴²	1985	697,646
1949	94,927	1986	739,072
1950	123,405	1987	787,493
1951	142,971	1988	1,026,188
1952	168,621	1989	913,372
1953	206,773	1990	957,925
1954	218,000	1991	1,292,014
1955	247,100	1992	1,025,686
1956	267,000	1993	973,706
1957	344,700	1994	886,455
1958	443,300	1995	820,466
1959	500,200	1996	890,167
1960	579,200	1997	989,532
1961	566,800	1998	1,118,215
1962	626,100	1999	1,073,982
1963	669,200	2000	995,390
1964	792,600	2001	1,049,851
1965	977,600	2002	968,909
1966	1,017,100	2003	1,040,648
1967	1,098,300	2004	1,181,355
1968	1,251,500	2005	1,233,837
1969	1,187,200	2006	954,022
1970	1,273,500	2007	1,074,764
1971	1,100,500	2008	822,118
1972	1,534,328	2009	900,882
1973	1,044,000	2010	915,538
1974	781,200	2011	934,351
1975	782,400	2012	1,141,906
1976	955,700	2013	1,047,116
1977	948,000		
1978	923,714		
1979	718,102		
1980	744,244		
Year	Visitors		
1981	564,721		
1982	550,168		
1983	577,439		
1984	628,658		

¹²⁴² The park did not install road counters until January 1949 so 1948 is a rough estimate.

Appendix C: Budget

Fiscal year	ONPS¹²⁴³	Fiscal year	ONPS
FY1948	67,000	FY1978	4,701,300
FY1949	103,000 110,343 source: <i>Miami Herald</i>	FY1979	4,893,000
FY1950	129,188	FY1980	5,296,000
FY1951	318,418	FY1981	5,867,700
FY1952	273,078	FY1982	5,588,000
FY1953	225,198	FY1983	5,893,000
FY1954	385,372	FY1984	6,313,000
FY1955	N/A	FY1985	6,463,900
FY1956	N/A	FY1986	6,177,500
FY1957	1,942,000	FY1987	8,256,100
FY1958	N/A	FY1988	8,540,300
FY1959	N/A	FY1989	7,203,000
FY1960	N/A	FY1990	9,049,300
FY1961	N/A	FY1991	8,849,000
FY1962	N/A	FY1992	10,069,600
FY1963	N/A	FY1993	10,360,300
FY1964	N/A	FY1994	10,896,000
FY1965	N/A	FY1995	12,129,000
FY1966	N/A	FY1996	12,229,000
FY1967	N/A		
FY1968	N/A		
FY1969	N/A		
FY1970	N/A		
FY1971	N/A		
FY1972	2,066,950		
FY1973	2,065,700		
FY1974	2,188,500		
FY1975	2,402,200		
FY1976	3,278,300		
FY1977	3,475,900		

¹²⁴³ Budget information is usually retained at the park level. Perhaps because hurricane damage to files, Everglades lacks the information for the missing years in the table. Extensive research in NPS files in other places failed to uncover this data.

Year	ONPS	CESI/EVER Restoration¹²⁴⁴	CERP Implementation¹²⁴⁵
FY1997	12,665,000	7,200,000	N/A
FY1998	12,544,000	12,000,000	N/A
FY1999	12,883,000	12,000,000	N/A
FY2000	13,172,000	7,908,000	N/A
FY2001	13,437,000	6,194,000	2,497,000
FY2002	13,594,000	4,000,000	5,544,000
FY2003	13,860,000	3,974,000	5,513,000
FY2004	14,038,000	3,937,000	4,722,000
FY2005	15,086,000	3,882,000	4,657,000
FY2006	15,481,000	3,840,000	4,620,000
FY2007	15,840,000	3,864,000	4,662,000
FY2008	16,984,000	3,849,000	4,657,000
FY2009	17,592,000	3,849,000	4,699,000
FY2010	17,991,000	3,873,000	4,789,000
FY2011	17,491,000	3,865,000	4,741,000
FY2012	16,953,000	3,822,000	4,691,000
FY2013	16,930,000	3,845,000	4,720,000

¹²⁴⁴ In FY1997, the park began to receive funding under the Comprehensive Ecosystems Restoration Initiative.

¹²⁴⁵ In FY2001, the park began to receive funding under the Comprehensive Everglades Restoration Program.

Appendix D: Superintendents and Deputy/Assistant Superintendents

Superintendents

Daniel B. Beard	August 27, 1947–May 31, 1958
Warren F. Hamilton	June 1, 1958–September 14, 1963
Stanley C. Joseph	September 15, 1963–January 29, 1966
Roger W. Allin	January 30, 1966–August 24, 1968
John C. Raftery	August 25, 1968–September 5, 1970
Joseph Brown	September 20, 1970–August 7, 1971
Jack E. Stark	September 5, 1970–September 26, 1976
John M. Good	October 10, 1976–February 27, 1980
John M. Morehead	May 4, 1980–February 15, 1986
Maureen Finnerty, Acting	February 16, 1986–July 5, 1986
Michael V. Finley	July 6, 1986–August 12, 1989
Robert L. Arnsberger, Acting	August 13, 1989–December 2, 1989
Robert S. Chandler	December 3, 1989–October 1991
Richard S. Ring	April 1992–September 2000
Maureen Finnerty	September 2000–August 2003
John Benjamin, Acting	August 2003–February 2004
Dan Kimball	February 2004–May 31, 2006 (Acting) June 1, 2006–March 31, 2014

Deputy/Assistant Superintendents¹²⁴⁶

Allyn F. Hands	January 1953–February, 1954
George W. Fry	April 1954–September 1959
Jack Dodd, Assistant	September 1969–June 1963
Carroll A. Burroughs	September 1963–After June 1967
Joseph L. Kennedy	January 1970–September 1971 or later
Claude W. “Mac” McClain	Uncertain to sometime in 1980
Richard B. Smith	1980–1983
Maureen Finnerty	June 1983–August 1986
Robert Arnsberger	April 1987–March 1991
A. Durand “Randy” Jones	Spring 1991–Early 1993
Larry Belli	July 1993–July 2001
John Benjamin	January 2002–March 2005
Keith Whisenant	November 2005–December 2012
Justin Unger	March 3, 2014–Present

¹²⁴⁶ The park has been less zealous in recording the tenures of deputy superintendents than superintendents; hence the imprecision in this listing.

Appendix E: Everglades Chronology

~12,000 years before present	Native peoples are present on the Florida peninsula.
2 Apr 1513	Spaniard Juan Ponce de León sights the east coast of a peninsula and names it La Florida, landing briefly among the Calusa.
1521	Ponce de León returns to the domain of the Calusa and is fatally wounded in a battle.
1565	Pedro Menéndez d’Avilés establishes the city of St. Augustine and plants short-lived outposts in the Calusa and Tequesta homelands.
1670	British colony of Carolina established, beginning a period of rivalry between Britain and Spain in the Southeast.
1702	British-backed native groups begin raids on Spanish missions in north Florida, ultimately causing the Spanish to retreat to the environs of St. Augustine and Pensacola.
1702 onward	Mikasuki-speaking Native Americans move into Florida, eventually forming a group that whites call the Seminole.
1763	Britain takes over Florida from Spain, and the Spanish remove about 200 Florida Indians to Cuba.
1763–1783	The British attempt settlements along the lower St. Johns River and at New Smyrna.
1775	American Revolution begins.
1783	Spain takes over Florida from Britain at the conclusion of the Revolutionary War.
1812–1815	During the War of 1812, British agents are active in Florida. General Andrew Jackson leads military forces into the Spanish colony.
1814–1819	U.S. incursions into Florida against Indians and African Americans, sometimes called the First Seminole War.
1821	Florida becomes a U.S. territory.
1823	First known use of term “Ever Glade” appears in Vignoles’s Observations Upon the Floridas.
Apr–May 1832	John James Audubon visits the Everglades to collect and sketch bird life.
1835–1842	Second Seminole War, with U.S. military operating in the Everglades and Florida Keys.
3 Mar 1845	Florida becomes the 27th U.S. state.
1858	Third Seminole War ends with removal of additional Seminoles to Oklahoma. The U.S. tacitly agrees to the continued presence of 100–150 Seminoles in the Big Cypress and Everglades country.
1858–1900	A handful of white settlers occupy homesteads on some of the Ten Thousand Islands and higher portions of the mainland, including Flamingo and Chokoloskee.
1861–1865	American Civil War. U.S. forces at Key West buy food from settlers on Florida keys and mainland.
1882	Hamilton Disston starts drainage work in the Everglades, connecting the Caloosahatchee River with Lake Okeechobee.

1896	Henry Flagler's Florida East Coast Railway reaches Miami.
Jun 1902	Guy Bradley made warden and deputy sheriff to patrol rookeries in the Everglades.
1904	Henry Flagler's Florida East Coast Railway is extended to Homestead.
Feb 1905	"The Everglades of Florida" in Century magazine asserts that the Everglades region ranks with western areas that have been protected as national parks.
8 Jul 1905	Walter Smith kills Guy Bradley off of Flamingo.
1906	Everglades Drainage District established, and work begins on canals from Lake Okeechobee to the sea.
2 Jun 1915	Florida legislature establishes Royal Palm State Park, to be owned and operated by the Florida Federation of Women's Clubs.
23 Nov 1916	Royal Palm State Park is officially dedicated.
1917	Florida legislature sets aside 100,000 acres of state land in Monroe County as a reservation for the Seminole Indians.
1919	William E. Safford publishes Natural History of Paradise Key and the Nearby Everglades of Florida.
1920	Charles Torrey Simpson's In Lower Florida Wilds published.
1921	The Everglades Drainage District begins work on a muck dike on the southern shore of Lake Okeechobee.
1923	Annual report of the Secretary of the Interior suggests that "an untouched example of the Everglades" be established as a national park.
1925	Harold H. Bailey in The Birds of Florida argues for a large state or national park and other preserves in the Everglades, Big Cypress, and Lake Okeechobee area.
18 Sep 1926	Hurricane estimated to be a Category 4 crosses Florida just south of Lake Okeechobee.
9 Feb 1928	Senator Park Trammell introduces bill for study of suitability of a national park in south Florida (no specific area specified).
Apr 1928	The Tamiami Trail is dedicated.
18 May 1928	Ernest F. Coe writes letter to NPS Director Stephen Mather proposing an Everglades National Park.
31 May 1928	Coe meets with NPS Associate Director Arno Cammerer in Washington, DC.
16 Sep to 17 Sep 1928	The "Okeechobee" Hurricane hits South Florida, killing at least 2,500 people.
11 Dec 1928	The Tropic Everglades National Park Association is formed at a meeting at Nautilus Hotel in Miami Beach; "Tropic" is later dropped from the name.
1929	John Kunkel Small in From Eden to Sahara proposes that selected areas of South Florida should be protected by state and federal governments "at once."
1 Mar 1929	A bill authorizing an NPS inspection of the Everglades as a possible national park is signed.
25 May 1929	The Florida legislature authorizes an Everglades National Park Commission and gives it authority to take title to lands for a national park. (The law is not to take effect until U.S. Congress authorizes the park.)
11 Feb to 17 Feb 1930	Director Horace Albright leads an official NPS inspection tour of the Everglades, accompanied by Ernest Coe, Congresswoman Ruth Bryan Owen, and Marjory

	Stoneman Douglas.
14 May 1930	Congresswoman Ruth Bryan Owen introduces resolution in U.S. House authorizing Everglades National Park.
3 Dec 1930	Secretary of the Interior Lyman Wilbur transmits a letter to Congress with opinion that the Everglades is of national park caliber.
17 Dec 1930	Senator Duncan Fletcher introduces bill in Senate to authorize Everglades National Park.
26 Dec to 30 Dec 1930	North Dakota Senator Gerald P. Nye and others from the Senate Public Lands Committee tour the Everglades.
18 Jan 1932	Frederick Law Olmsted Jr. and William Wharton submit report on their inspection tour of park area to the National Parks Association.
May 1932	Ruth Bryan Owen loses primary to a “wet” candidate, J. Mark Wilcox.
Winter 1932/33	The U.S. Department of Agriculture begins wild cotton eradication in the Everglades, with an annual camp at Flamingo.
4 Mar 1933	Franklin Delano Roosevelt inaugurated as president; both houses of Congress have strong Democratic majorities.
1933–1934	Civilian Conservation Corps Company 262 does landscape work and constructs service buildings at Royal Palm State Park.
30 May 1934	President Roosevelt signs P.L. 73-267 authorizing Everglades National Park.
Mar 1935	Secretary of the Interior Harold Ickes is in Miami consulting with Everglades National Park Association, Seminoles, and others on park boundary.
3 Apr 1935	Secretary of the Interior Ickes writes Governor David Sholtz establishing tentative boundaries for Everglades National Park.
Dec 1934	An NPS delegation (H. C. Bryant, Roger Toll, and George Wright) is in the Everglades to study park boundary question.
1935	Florida legislature authorizes trustees of Internal Improvement Fund to exchange state lands elsewhere for private lands within the park boundary.
30 Apr 1935	After Florida legislature reestablishes the Everglades National Park Commission (ENPC) with twelve members and a \$25,000 appropriation; Governor David Sholtz makes Ernest F. Coe its executive chairman, a salaried position.
10 Jun 1935	NPS Director Arno Cammerer writes D. Graham Copeland of the Collier Corporation promising to maintain commercial fishing in the park.
2 Dec 1936	Committee on Lands of the Everglades National Park Commission submits recommendations on boundary.
5 Jan 1937	Fred P. Cone inaugurated as Florida governor.
15 Jan 1936	Organizational meeting of the Everglades National Park Commission held in Miami.
Jan 1937	NPS delegation headed by Director Cammerer is in Miami to meet with the ENPC.
Apr 1937	Secretary of the Interior Ickes and Harry Hopkins inspect proposed park area (and do some fishing).
Apr 1937	Florida legislation abrogates 1917 Seminole reservation in Monroe County and replaces it with a Broward County reservation.
8 Jun 1937	Governor Cone demands resignations from all members of the Everglades National

	Park Commission.
13 Aug 1937	Secretary of the Interior Ickes writes Florida Governor Fred Cone outlining an acceptable boundary for Everglades National Park.
21 Aug 1937	Congress in P. L. 75-336 removes the ban on spending federal funds for Everglades National Park.
16 Nov 1937	Governor Cone withholds appropriated funds from the ENPC and appoints G. Orrin Palmer as its chair.
1 Nov 1938	Daniel Beard's Wild Life Reconnaissance, Special Report: Everglades National Park Project printed.
Mar 1939	Former Congressman J. Mark Wilcox becomes president of the Everglades National Park Association.
7 Jan 1941	Spessard L. Holland inaugurated as governor.
Mar 1941	NPS Director Newton Drury makes first visit to the Everglades and meets with Governor Holland in Tallahassee.
9 May 1943	Florida law authorizing Internal Improvement Fund to convey land for Everglades National Park is signed.
Oct 1943	Humble Oil and Gulf Oil secure oil exploration leases on substantial acreage in Dade and Monroe Counties.
6 Dec 1944	President Roosevelt signs act allowing for acceptance by interior of land for Everglades National Park subject to reserved oil and gas rights (P.L. 78-463).
Dec 1944	Deal worked out with NPS, USF &W, and Internal Improvement Fund leading to agreement to transfer 500,000 acres from state ownership.
2 Jan 1945	Millard Caldwell succeeds Spessard Holland as governor.
3 Mar 1945	Governor Caldwell appoints Gilbert Leach as managing director of a revitalized Everglades National Park Commission.
12 Apr 1945	Harry S. Truman becomes president upon Roosevelt's death.
Jun 1945	Fires burn one-half of Royal Palm State Park.
21 Oct to 26 Oct 1945	Meetings in New York City with John Pennekamp representing Governor Caldwell, Coe, John Baker of Audubon, C. Ray Vinten of NPS, and Ira Gabrielson, chief of USF&W.
1945	Everglades National Wildlife Preserve established with Daniel B. Beard as refuge manager.
11 Feb 46	Miami meeting with Vinten, Leach, Baker, Pennekamp, and Wilcox representing the Everglades National Park Association; Ernest Coe is not present.
18 Mar 1946	Julius Krug assumes office as Secretary of the Interior, as successor to Harold Ickes.
4 Apr 1946	Governor Caldwell reactivates Everglades National Park Commission and appoints Pennekamp, August Burghard, and others as members.
25 Apr 1946	New version of the Everglades National Park Commission holds its first meeting.
21 Oct 46	Beard, Vinten, and NPS Regional Director Allen meet with Holland and Everglades National Park Commission in Jacksonville.
Winter 1946/47	Tropical Audubon Society initiates tours within the Everglades National Park area.
Feb-Mar 1947	Pennekamp takes lead in getting Florida legislature to support \$2 million

	appropriation for land acquisition.
2 Apr 1947	Secretary of Interior Julius Krug accepts 706 square miles as minimum size of Everglades National Park.
10 Apr 1947	Vinten helps conclude an agreement between Governor Caldwell and Director Drury.
20 Jun 1947	Secretary of the interior establishes Everglades National Park.
Jun 1947	Florida Attorney General Tom Watson files suit against state actions to convey lands for the park.
27 Aug 1947	Daniel Beard enters on duty as first Everglades National Park superintendent.
Oct–Nov 1947	Hurricanes bring massive flooding to South Florida.
5 Dec 1947	First day of issue of Everglades commemorative stamp, issued at Florida City Post Office.
6 Dec 1947	President Truman dedicates the park in ceremonies at Everglades City.
13 Apr 1948	Interior provides comments to Army on proposed Central & Southern Florida Flood Control Project.
30 Jun 1948	Federal Flood Control Act passed, authorizing the Central & Southern Florida Flood Control project.
Feb–Apr 1948	Dry conditions in park with significant mortality of young birds.
21 Oct 1948	The Miami Hurricane causes widespread flooding in South Florida and knocks houses in Flamingo off their stilts.
Nov 1948	Announcement of NPS purchase of 134,880 acres from the Model Land Company.
Apr 1949	Florida legislature establishes the Central & Southern Florida Flood Control District, abolishing the Everglades Drainage District, and appropriating \$3.25 million as state share of project.
Jun 1949	Squatters on park land given two months to vacate.
27 Jun 1949	Glades buggies and airboats banned within park, except with superintendent's approval.
7 Jul 1949	Federal Register publication of regulations banning air boats in the park.
10 Oct 1949	Congress authorizes the SOI to purchase private land, with owners retaining mineral rights. (P.L. 81-340).
1950	U.S. Army Corps of Engineers and Central & Southern Florida Flood Control District begin work on flood control projects.
22 Feb 1950	Secretary of the interior issues order setting park at 1,228,500 acres.
Apr 1950	Frederick Law Olmsted Jr. in the park to discuss master planning.
May 1950	Major fires in South Florida.
8 May 1950	Condemnation suit for private lands in park filed.
Jun 1950	Superintendent's order closes all inland waters to nets and seines.
4 Dec 1950	Declaration of Taking approved on 125,000 acres of land within park boundary.
1 Mar 1951	Publication in Federal Register of Secretary of the Interior Order #2555, enlarging park boundary.
9 Mar 1951	Park fishing regulations, including a total ban on drag seines and restrictions on inland waterways, take effect.
31 May 1951	Judge Holland signs order approving land map in condemnation suit.

1 Jun 1951	Ingraham Highway closed to all commercial traffic, including fish hauling.
Summer/Fall 1951	Last Flamingo residents depart and park staff burn all but two houses in the community.
5 Nov 1951	First meeting of Everglades Natural History Association (park cooperating association) at Royal Palm Lodge.
1 Dec 1951	Federal government accepts exclusive jurisdiction over Everglades National Park from state.
Oct 1952	Royal Palm Lodge building moved out of the park.
30 Oct 1952	Secretary of the interior approves northwest extension of park boundary.
1954	Florida Bay District Ranger Station opened on Key Largo.
12 Mar 1954	Secretary issues order enlarging park to 1,499,428 acres (an increase of 271,000 acres).
May 1954	Acting Governor Charley Johns (anti-park) defeated in gubernatorial primary by Leroy Collins (pro-park).
1955	Homestead Air Force Base reactivated as a Strategic Air Command facility.
Mar 1955	Superintendent Beard, NPS Regional Director Allen, and Assistant to the SOI Raymond Davis meet with governor in Tallahassee regarding park development.
Mar 1955	Everglades Park Company beats out Fred Harvey for Flamingo concession contract.
Sep 1955	Iori brothers begin constructing labor camp in the Hole-in-the-Donut for tomato growing.
Oct 1955	Meeting with Governor Collins, Director Wirth, and others in Pennekamp's office; Wirth holding firm on no motel at Flamingo.
1 Jan 1956	Twenty-year concession contract with Everglades Park Company goes into effect.
1 Mar 1957	Main Park Road to Flamingo opened.
6 Jun to 8 Jun 1957	Sixty-five scientists meet in park to discuss a research program.
Aug 1957	The U.S. recognizes the Seminole Tribe of Florida.
Nov 1957	Warner Brothers crew in Everglades City filming Wind Across the Everglades.
20 Dec 1957	Visitor center/museum and concession facilities at Flamingo opened to public.
Apr 1958	Congressional hearings in Miami on proposed northwest extension of park.
21 Apr 1958	First prescribed burn in the park, which was the first in the service to be conducted as part of a long-range, prescribed burning program.
15 Jun 1958	Warren Hamilton reports for duty as second Everglades National Park superintendent.
Jul 1958	Engineer Lamar Johnson's report on park water resources released.
2 Jul 1958	Congressional action on northwest boundary expansion (P.L. 85-482)
1 Jan 1959	Cuban revolutionaries led by Fidel Castro enter Havana and depose Bautista government.
8 Jan 1959	Meeting in Tallahassee regarding 70,000 acres from state in northwest extension.
25 Feb 1959	Land exchange with state and land donation from Collier Corporation donation completed.
Jul 1959	First edition of Dr. Bill Robertson's Everglades: The Park Story published.

Dec 1959	Extensive amount of Hole-in-the-Donut land is under cultivation.
8 Sep 1960	Hurricane Donna hits park, doing considerable damage to the Flamingo developed area and mangrove forests.
Dec 1960	Dedication of John Pennekamp Coral Reef State Park on Key Largo.
3 Jan 1961	U.S. breaks diplomatic relations with Cuba.
17 Apr 1961	Bay of Pigs invasion by Cuban refugees fails to topple Castro government.
29 Jul 1961	Florida Game & Fresh Water Fish Commission bans alligator hunting statewide.
1 Oct 1961	Meeting in Washington of NPS with Corps on park water needs.
9 Dec 1961	NPS Director Conrad Wirth dedicates park's main visitor center on Parachute Key.
Winter 1961/62	Last season of Tropical Audubon Society's guided tours within the park.
Jan 1962	The U.S. recognizes the Miccosukee Tribe of Indians of Florida.
Feb 1962	Area around Anhinga Trail is a mudflat. Water being pumped from a well.
May–Jun 1962	Shark Valley fire burns 77,664 park acres and 106,880 acres outside park.
Sep 1962	Rachel Carson's Silent Spring published.
14 Oct to 28 Oct 1962	Cuban missile crisis. Park prepares an emergency evacuation plan.
15 Dec 1962	Water Conservation Area 3 is formally dedicated.
12 Feb 1963	Northwest Flight 705 crashes in park southwest of Seven-Mile Road tower, killing 43.
15 Sep 1963	Stanley C. Joseph becomes third Everglades National Park superintendent.
8 Nov 1963	Secretary Udall attends dedication of National Key Deer Refuge.
27 Feb 1964	Ground-breaking ceremony for renewed work on Cross Florida Barge Canal.
Mar 1964	Sixty additional motel rooms at Flamingo opened.
May 1964	Superintendent Joseph attends dedication of Aerojet plant adjacent to park on east.
3 Sep 1964	National Wilderness Act signed into law.
Oct 1964	First of six Flamingo overnight cabins opened to public.
Jul 1965	Battery A/2/52 completes its move to Nike Missile Base HM-69 inside the park's Hole-in-the-Donut.
8 Sep 1965	Hurricane Betsy strikes the park, downing many trees and damaging boardwalk trails.
4 Feb 1965	Shark Valley Loop Road and observation/fire tower opened.
Feb 1965	Superintendent Joseph in Tallahassee for Governor's Conference on Water Resources for Florida.
May 1965	Only pumps are keeping any water in Taylor Slough.
8 Jun 1965	Superintendent in Washington for meetings with Director Hartzog and Secretary of Defense Robert McNamara and SOI Udall on water for park.
13 Jan 1966	Roger W. Allin arrives as fourth park superintendent.
1 Jul 1966	Park begins charging \$1.00 per private automobile entry fee at main entrance.
Aug 1966	Deer deaths because of water releases getting considerable publicity.
21 Dec 1966	Park gets millionth visitor for the year—a first.
3 Jan 1967	Claude Kirk sworn in as governor. He soon appoints Nathaniel Reed as his special assistant on environmental issues.
May 1967	Much press coverage of Everglades drought.

Jul 1968	Corps sends "Water Resources for Central and South Florida" to Congress, House Doc. 369, 90th cong., 2d sess., in response to 1965 request.
25 Aug 1968	John C. Raftery becomes park's fifth superintendent.
18 Sep 1968	Ground-breaking for a jetport in the Big Cypress.
Oct 1968	Biscayne National Park created.
Apr 1969	Everglades Coalition founded.
Jul 1969	Florida Defenders of the Environment formed.
Sep 1969	Luna Leopold's Environmental Impact of Big Cypress Jetport released.
17 Oct 1969	P.L. 91-81 authorizes National Park Service to acquire 6,640 acres in the Hole-in-the-Donut.
Nov 1969	Friends of the Everglades founded.
5 Dec 1969	The U.S. Lacey Act is amended to cover reptiles and amphibians, making it a federal offense to export alligator hides out of Florida.
1 Jan 1970	National Environmental Policy Act passed (83 Stat. 852).
16 Jan 1970	The Jetport Pact is signed, beginning a search for an alternate site and committing U.S. government to a study of South Florida ecosystems.
19 Jun 1970	Congress enacts a water guarantee for the park (P.L. 91-282).
20 Sep 1970	Joseph Brown becomes park's sixth superintendent.
31 Dec 1970	Omnibus River and Harbor and Flood Control Act of 1970 (P. L. 91-611) mandates a flow of 315,000 acre-feet per year to park.
19 Jan 1971	President Richard Nixon directs the Corps to stop work on Cross Florida Barge Canal.
Spring 1971	Park's environmental education program begins with grade-school students visiting Shark Valley.
11 Jun 1971	Art Marshall's paper "Repairing the Florida Everglades Basin" appears.
5 Sep 1971	Jack E. Stark becomes park's seventh superintendent.
1971	Corps completes channelization of Kissimmee River, converted to Canal C-38.
Mar 1972	Shark Valley tram tours inaugurated.
1972	State of Florida enacts Environmental Land and Water Management Act, Water Resources Act, and Florida Comprehensive Planning Act.
21 Oct 1972	Marine Mammal Protection Act passed, protecting all marine mammals in U.S. waters.
11 Nov 1974	Big Cypress Swamp National Preserve created (88 Stat. 1258).
30 Sep 1975	Everglades Park Co. concession expires. Everglades Park Catering, Inc. (a subsidiary of Restaurant Associates, Inc.), takes over on October 1, 1975.
Jun 1976	State of Florida passes law regarding the restoration of the Kissimmee River.
10 Oct 1976	John M. Good becomes park's eighth superintendent.
26 Oct 1976	Everglades National Park designated an International Biosphere Reserve.
1977	Loop Road Environmental Education Center opened, staffed by Everglades although located in Big Cypress National Preserve.
1977	South Florida Natural Resources Center established.
1978	NPS purchases concessioner buildings at Flamingo for \$1.3 million.
10 Oct 1978	1,296,500 acres of the park are designated as wilderness.

15 Jan 1979	Memorandum of agreement among Corps, South Florida Water Management District, and NPS concerning water quality.
26 Oct 1979	Everglades National Park designated a World Heritage Site.
1980	Much negative publicity for South Florida—Liberty City riots, drugs, crime—and park believes it causes a decline in visitation.
17 Mar 1980	New fishing regulations approved, imposing a December 31, 1985, end to commercial fishing in the park. Soon thereafter, the Organized Fishermen of Florida file suit to block the regulations, ultimately without success.
15 Apr to 31 Oct 1980	Marinel boatlift brings as many as 125,000 Cuban refugees to South Florida, mostly in May and June.
1980	U.S. Army removes missiles and other equipment from Nike launch area.
4 May 1980	John M. Morehead becomes park's ninth superintendent.
20 Mar 1981	Hell's Bay Canoe Trail (8 miles) and Wilderness Waterway (99 miles) get national trails designation.
Jun 1981	Florida enacts "Save Our Rivers" law under Governor Graham.
5 Apr 1982	Ceremony marking park's designation as World Heritage Site and Biosphere Reserve with NPS Director Dickenson and Marjory Stoneman Douglas in attendance.
Summer 1982	Governor Bob Graham creates Everglades Wildlife Management Committee, largely in response to culling of deer herds.
1 Oct 1982	Concessioner Gettysburg Tours, Inc. takes over operations of tram trips at Shark Valley.
1982	U.S. Army turns over Nike Base HM-69 to National Park Service.
1983	Florida passes Water Quality Assurance Act.
10 Mar 1983	Park chief scientist Gary Hendrix presents seven-point plan to South Florida Water Management District Board asking for increased water deliveries to park.
1983	Trust for Public Lands sells former Aerojet lands (50,000 acres) to State of Florida.
11 May 1983	Governor Graham withdraws state from Jetport pact—opposes a jetport anywhere in Dade County.
7 Jul 1983	Law enforcement officials arrest 200 in a large-scale law enforcement operation aimed at drug traffic centered in Everglades City.
9 Aug 1983	Governor Graham announces "Save Our Everglades" program after a series of meetings. Aimed at "rejuvenation" of entire Kissimmee-Lake Okeechobee-Everglades ecosystem—a vision more than a concrete plan.
30 Nov 1983	Congress acts to give the Corps expanded authority in the 8.5 Square Mile Area, including \$10 million for land acquisition (P.L. 98-181).
1984	Florida enacts Wetlands Protection Act.
Feb 1984	Governor Graham establishes Everglades National Park/East Everglades Committee.
1984	Everglades Park Catering Co. sells Flamingo concession to T. W. Services, Inc., of Chicago.
Winter 1984— Winter 1985	One-year trial of early draw-down of water to Frog Pond area to enable winter vegetable growing.

1985	Florida enacts Growth Management Act.
18 Apr 1985	Everglades National Park East Everglades Commission releases Implementation Plan.
31 Dec 1985	Commercial fishing ends in park waters.
Jun 1986	U.S. Supreme Court refuses to hear an appeal by the Organized Fishermen of Florida on park commercial fishing ban.
6 Jul 1986	Michael V. Finley arrives as park's tenth superintendent.
Oct 1986	Everglades Natural History Association is officially renamed Florida National Parks & Monuments Association, recognizing its role at four South Florida parks.
1987	Florida enacts Surface Water Improvement and Management (SWIM) Act.
Apr 1987	Everglades Regional Collection Center formed to serve the four South Florida Parks.
4 Jun 1987	Everglades National Park designated a Wetland of International Importance.
1 Oct 1987	Everglades Employees Association established.
6 Dec 1987	40th anniversary celebration held in conjunction with reopening of Shark Valley operation with Senator Bob Graham as keynote speaker.
Mar 1988	Governor Martinez forms East Everglades Land Acquisition Task Force.
1 Oct 1988	East Everglades Land Acquisition Task Force releases report.
11 Oct 1988	Dexter Lehtinen, acting U.S. attorney, files United States v. South Florida Water Management District et al. claiming water entering federal reserves is polluted.
3 Dec 1989	Robert S. Chandler becomes park's eleventh superintendent.
13 Dec 1989	Passage of the Everglades National Park Protection and Expansion Act of 1989, expanding park to include 107,600 acres in the East Everglades and providing a roadmap for the Corps, South Florida Water Management District, and NPS to work together.
Sep 1990	Miccosukee Tribe of Indians of Florida opens a bingo parlor at Dade Corners, the intersection of Krome Avenue and the Tamiami Trail.
1990	Florida Keys National Marine Sanctuary established.
7 May 1991	Marjory Stoneman Douglas Everglades Protection Act signed.
20 May 1991	Governor Chiles "surrenders" in Lehtinen water quality suit.
8 Jul 1991	Settlement agreement in Lehtinen suit announced.
1 Oct 1991	Chekika State Park donated to Everglades National Park by state.
1992	Everglades Coalition publishes its own restoration plan.
Mar 1992	Judge Hoeveler enters settlement in the Lehtinen water quality suit.
Apr 1992	Richard Ring becomes the park's twelfth superintendent.
24 Aug 1992	Category 5 Hurricane Andrew makes landfall just north of Homestead and moves across the Everglades causing extensive damage. The park's main visitor center is damaged beyond repair.
1993	Base Realignment and Closure Commission designates closure of Homestead Air Force Base, except for small portion for a reserve wing.
1993	Park begins producing Waterways television programs.
Jan 1993	Secretary of the Interior Bruce Babbitt addresses the annual conference of Everglades Coalition, soon thereafter forming the South Florida Interagency Task

	Force.
13 Jul 1993	Secretary Babbitt, Governor Chiles, U.S. Sugar Corp., and Flo-Sun announce a statement of principles on cleaning up Florida water.
Oct 1993	South Florida Ecosystem Restoration Task Force formed, with a Science Subgroup formed subsequently.
Dec 1993	The World Heritage Committee of UNESCO places park on the List of World Heritage in Danger.
3 Mar 1994	Governor Chiles establishes the Governor's Commission for a Sustainable South Florida.
3 May 1994	Everglades Forever Act passed.
Aug 1994	11th Circuit affirms Judge Hoeveler's decree in water quality lawsuit.
Nov 1994	The Corps releases its report on the reconnaissance phase of the Restudy of the Central & Southern Florida project.
11 May 1996	ValuJet Flight 592 crashes in Water Conservation Area 3, killing 110.
Aug 1996	The Governor's Commission on a Sustainable South Florida releases a conceptual plan for the restudy.
12 Oct 1996	The Water Resources Development Act (P.L. 104-303, section 528) authorizes the Corps to develop a Comprehensive Everglades Restoration Plan (CERP).
Oct 1997	The park becomes a "partner park" with Pantanal National Park in Brazil.
6 Dec 1997	Vice President Al Gore attends the park's 50th anniversary and rededication celebration, announcing the purchase of the Talisman Sugar property.
Oct 1998	The Corps releases for comment the draft feasibility study for CERP.
30 Oct 1998	Signing of the Miccosukee Reserved Area Act (P.L. 105-313), which clarifies the tribe's authority in a 666-acre tract within the park along the Tamiami Trail.
30 Dec 1998	Park's comments on the draft CERP feasibility study conclude that it is not a plan for restoration.
Jun 1999	The Miccosukee Tribe of Indians of Florida opens casino and resort complex at Dade Corners, the intersection of Krome Avenue and the Tamiami Trail.
1 Jul 1999	Vice President Gore personally delivers the CERP feasibility study and chief of engineer's report to Congress.
16 May 2000	Governor Jeb Bush signs Everglades Restoration and Investment Act.
Sep 2000	Maureen Finnerty becomes the park's thirteenth superintendent.
Oct 2000	Construction completed on two new bridges carrying the main park road over Taylor Slough.
7 Nov 2000	Disputed Florida returns leave U.S. presidential election undecided.
11 Dec 2000	President Clinton signs the Water Resources Development Act (P.L. 106-541, Title VI, section 601), which includes the Comprehensive Everglades Restoration Plan. The U.S. Supreme Court stops the recount in Florida, assuring that George W. Bush will become president.
15 Jan 2001	Air Force releases its Second Supplemental Record of Decision nixing a commercial airport at Homestead.
2002	South Florida National Parks Trust formed to raise funds and make friends for the four South Florida national parks.

2002	Park begins its Artists in Residence in Everglades (AIRIE) program.
Nov 2003	Programmatic regulations for implementing the CERP are published.
2003	Florida legislation extending deadline for reduction of phosphorous in waters discharged to federal preserves.
1 Jun 2005	Dan Kimball named park's fourteenth superintendent.
25 Aug 2005	Hurricane Katrina strikes the park, damaging buildings and vehicles at Flamingo.
24 Oct 2005	Hurricane Wilma strikes the park, doing serious damage at Flamingo, rendering the lodge and cabins beyond salvaging.
Jun 2007	At the request of the co-leader of the U.S. delegation, the World Heritage Committee of UNESCO removes park from the List of World Heritage in Danger.
8 Nov 2007	The Water Resources Development Act of 2007 is signed.
Jun 2008	Governor Charlie Crist announces state purchase of U.S. Sugar Corp. acreage in the Everglades Agricultural Area.
Jul 2010	At the request of the U.S., the World Heritage Committee of UNESCO again places the park on the List of World Heritage in Danger.
Oct 2010	The state of Florida purchases 26,800 acres from the U.S. Sugar Corporation for use as reservoirs or stormwater treatment areas.
Oct 2011	The USACE launches the Central Everglades Planning Project, designed to improve conditions in the core of the Everglades.
Jan 2013	The \$30 million C-111 spreader canal project is dedicated.
19 Mar 2013	SOI Ken Salazar dedicates one-mile bridge carrying a portion of the Tamiami Trail.
Mar 2014	Kimball retires as Everglades superintendent.
10 Jun 2014	The Water Resources Reform and Development Act of 2014 is signed.

Appendix F: Capsule Biographies

Adams, Col. James W. Rosenoff (Dates unknown¹²⁴⁷). The Corps' Jacksonville district engineer from 1978 to 1981; U.S. Military Academy class of 1959.

Albright, Horace (1890–1987). Second NPS director from 1929 to 1933. Albright led the NPS inspection team to the Everglades in 1930 and worked with Ernest F. Coe to draft authorization legislation for the park.

Allen, Thomas J. (1897–1985). As director of NPS Region One from 1944 to 1951, Allen was intimately involved in the negotiations with the state of Florida that led to the park's establishment.

Andrus, Cecil (Born 1931). Idaho governor from 1971 to 1977 and 1987 to 1995. Secretary of the interior in the Carter administration, 1977–1981.

Appelbaum, Stuart J. (Birth date unknown). Long-time planner in the Corps' Jacksonville District, he led the team that developed the CERP.

Arnett, G. Ray (Born 1924). Assistant secretary for fish, wildlife, and parks, 1981–1985 in the Reagan administration; director of the National Wildlife Federation, 1961–1979.

Askew, Reubin O. (1928–2014). Governor of Florida, 1971–1979.

Atkinson, E. E. (Dates unknown). Warden at Royal Palm State Park in the 1930s.

Atwood, Wallace W. (1872–1949). Founder, Geography Department, Clark University; President, Clark University. On executive board of National Parks Association.

Audubon, John James (1785–1851). Noted nineteenth-century naturalist and wildlife painter who spent time in the Everglades in the 1830s collecting bird specimens to study and paint.

Babbitt, Bruce (Born 1938). Two-term governor of Arizona and secretary of the interior, 1993–2001 in the Clinton administration; he was a prime mover in pushing forward the CERP legislation.

Bailey, Harold H. (1878–1962). Florida ornithologist who argued for a national reservation in the Everglades in his 1925 book, *The Birds of Florida*,

¹²⁴⁷ A reasonable effort was made to ascertain birth and death years for individuals; in a handful of instances, no data were found.

Baker, John H. (1894–1973). Executive director, later president, of the National Association of Audubon Societies in the 1930s through the 1950s; he was involved in negotiations between the state of Florida and the NPS that led to the establishment of Everglades National Park in 1947.

Barley, George (1934–1995). A successful real estate developer who co-founded the Save Our Everglades Foundation (now the Everglades Foundation) in 1993. Barley led the unsuccessful fight to impose a penny-a-pound tax on Florida sugar. He died in a private plane crash on his way to a meeting with the Corps of Engineers.

Barley, Mary (Born 1946). Following the 1995 death of her husband, George Barley, she remained active in Everglades restoration and has been a long-time member of the Everglades Foundation board.

Beard, Daniel B. (1906–1971). Author of 1938 Everglades *Wildlife Reconnaissance*; superintendent of Everglades National Wildlife Preserve, 1945–1947; and first superintendent of Everglades National Park, 1947–1958.

Bedell, Harriet (1875–1969). A deaconess of the Episcopal Church who ministered to the Miccosukees from 1933 to 1960 from her Glades Cross Mission in Everglades City.

Bellamy, Jeanne (1911?–2004). A journalist, businesswoman, and conservationist, she was a long-time reporter for the *Miami Herald* and later served on its editorial board. She also was on board of the South Florida Water Management District (SFWMD).

Berg, Eric (Birth date unknown). Sculptor with a Master in Fine Arts from University of Pennsylvania who created the Florida panther sculpture located on the grounds of the Ernest F. Coe Visitor Center.

Bingham, Mary Lily Kenan Flagler (1867–1917). Widow of Henry Flagler who donated 960 acres for Royal Palm State Park.

Blanding, Albert (1876–1970). Lieutenant General in the U.S. Army who served on the Everglades National Park Commission.

Bloxham, William D. (1831–1911). Governor of Florida, 1881–1885, and again, 1897–1901; he helped to accomplish the sale of Everglades acreage to Hamilton Disston.

Bomar, Mary A. (Birth date unknown). NPS director, 2006–2009, in the George W. Bush administration.

Bowlegs, Billy, or Holata Micco (~1810–1859). A Seminole leader who resisted the U.S. in the Second and Third Seminole Wars, finally agreeing to move to the Indian Territory in 1858.

Bradley, Guy M. (1870–1905). Audubon bird warden in the Everglades, 1902–1905. Killed while on duty by Walter Smith in waters off Flamingo, July 8, 1905. His death became a rallying point for opponents of the plume trade.

Brookfield, Charles (1903–1988). Long-time representative of Tropical Florida Chapter of the National Audubon Society. Led many bird tours in Everglades National Park and advocated for the park. Co-author of *They All Called It Tropical*.

Broward, Napoleon Bonaparte (1857–1910). Florida governor, 1905–1909, who made draining the Everglades a top state priority.

Browder, Joe B. (Born 1938). Journalist and conservationist who was instrumental in the fight against the jetport in the Big Cypress Swamp and brought Marjory Stoneman Douglas into that campaign.

Brown, Loren B. “Totch” (1920–1996). Woodsman, fisherman, gator hunter, marijuana smuggler, and one of the last of the self-described Gladesmen. Author of 1993’s *Totch: A Life in the Everglades*.

Browner, Carol (Born 1955). Head of Florida Department of Environmental Regulation, 1991–1993. Administrator of the U.S. Environmental Protection Agency, 1993–2001. Director, White House Office of Energy and Climate Change Policy, 2009–2011.

Bryant, Cecil Farris (1914–2002). Governor of Florida, 1961–1965.

Bryant, Dr. Harold C. (1886–1968). Long-time NPS official who was part of team that studied the Everglades National Park boundary question in late 1934.

Bumpus, Dr. Hermon C. (1862–1943). Director, American Museum of Natural History; member of the 1930 NPS party investigating the suitability of the Everglades as a national park.

Burghard, August, Jr. (1902–1987). Ft. Lauderdale advertising executive, amateur historian, and important member of the Everglades National Park Commission in the 1940s.

Burlew, Elbert K. (Dates unknown). Department of Interior (DOI) official; member of the 1930 NPS party investigating the suitability of the Everglades as a national park.

Burns, William Haydon (1912–1987). Florida governor, 1965–1967.

Bush, George H. W. (Born 1924). U.S. president, 1989–1993. After meeting with Everglades Superintendent Michael Finley, he agreed to support the East Everglades expansion bill, passed in 1989.

Bush, George W. (Born 1946). U.S. president, 2001–2009. Supported Everglades restoration but did not assertively press to fund federal appropriations for it.

Bush, John Ellis “Jeb” (Born 1953). Governor of Florida, 1999–2007, he helped obtain substantial appropriations from the state legislature for Everglades restoration.

Butcher, Devereux (1907–1991). Headed the National Parks Association (now the National Parks Conservation Association) from 1942 to 1950.

Cain, Stanley A. (1902–1995). Pioneering ecologist and founder of the Department of Conservation at the University of Michigan, he was assistant secretary for fish, wildlife, and parks, 1965–1968, in Johnson administration.

Caldwell, Millard F. (1897–1984). Florida governor, 1945–1949. Caldwell followed up on Spessard Holland’s efforts and helped persuade the Florida legislature to appropriate \$2 million to acquire private land for Everglades National Park.

Cammerer, Arno B. (1883–1941). NPS director, 1933 to 1940. Everglades National Park was authorized in 1934 during his directorship.

Carlton, Doyle (1887–1972). Governor of Florida, 1929–1933.

Carpenter, Colonel Robert M. (Dates unknown). Corps of Engineers district engineer for the Jacksonville District from 2003 to 2006; U.S. Military Academy class of 1981.

Carr, Archie F., Jr. (1909–1987). Leading authority on sea turtles and long-time University of Florida professor. Author of 1973’s *The Everglades*.

Carr, Marjorie Harris (1915–1997). Prominent environmental activist and Archie Carr’s wife.

Carver, John A., Jr. (Born 1918). DOI assistant secretary for public land management, 1961–1964.

Catts, Sidney (1876–1936). Florida governor, 1917–1921.

Chapman, Frank M. (1864–1945). Ornithologist and Audubon official who visited the Everglades.

Chapman, Oscar L. (1896–1978). Secretary of the interior from 1949 to 1953 in the Truman administration.

Chekika (?–1840). A notable Indian leader in the Second Seminole War, described as a “Spanish Indian.” Colonel William S. Harney captured and executed him on a hammock in the East Everglades that is now part of Everglades National Park.

Chiles, Lawton (1930–1998). Florida governor from 1991 until he died in office in December 1998, Chiles famously “surrendered his sword” and admitted that Florida’s waters were polluted.

Clark, William P. (Born 1931). Secretary of the interior in the Reagan administration, 1983–1985.

Coe, Ernest F. (1876–1951). A landscape architect, he was the founder and prime mover in the Everglades National Park Association from its inception in 1928. Worked closely with NPS officials in getting the park authorized (1934). Executive chairman of the Everglades National Park Commission, a state agency, from 1935 to 1937.

Cohen, Bonnie R. (Birth date unknown). Assistant secretary for management and budget under Secretary of the Interior Bruce Babbitt, 1993–1997.

Colee, Harold (1894–1968). Executive vice president of the Florida State Chamber of Commerce in the 1940s, Colee was a key member of the second version of the ENPC.

Collier, Barron Gift (1873–1939). Collier built a fortune with advertising on streetcars across the U.S. He began buying land in southwest Florida in 1921, eventually acquiring almost one million acres and getting the state to split off Collier County from Lee County in 1923.

Collier, Barron Gift Jr. (?–1976). Carried on the Collier family interests after the death of his brother Miles Collier in 1954.

Collier, John (1884–1968). Social reformer who was U.S. commissioner of Indian affairs, 1933–1945; chief architect of the “Indian New Deal.”

Collier, Miles (1913–1954). Youngest son of Barron G. Collier, he took active interest in having Everglades City serve as the western gateway to Everglades National Park.

Collins, Michael (Birth date unknown). Executive director, SFWMD, March 2011–

Collins, Thomas LeRoy (1909–1991). Florida lawyer who served as governor from 1955 to 1961. Instrumental in persuading the NPS to build a lodge at Flamingo.

Cone, Frederick P. (1871–1948). Lake City attorney and Florida governor, 1937–1941. Fired Ernest F. Coe as executive chairman of Everglades National Park Commission in 1937 and appointed his cousin, G. O. Palmer, to the position.

Copeland, David Graham (1885–1949). Barron Collier’s right-hand man who oversaw the building of Everglades City and the Tamiami Trail. Member of the first version of the Everglades National Park Commission and political boss of Collier County.

Craighead, Frank C., Sr. (1890–1982). Specialist in forest entomology and Everglades flora; long-time research collaborator with Everglades National Park. Craighead’s laboratory is preserved at the Collier County Museum.

Creel, Tilford C. (Dates unknown). Executive director, SFWMD, 1991–1994.

Crist, Charles J., Jr. (Born 1956). Governor of Florida, 2007–2011.

Dail, George “Ed,” Jr. (Dates unknown). Executive director, South Florida Flood Control District, 1958–1974.

Darwin, Arthur Leslie (1882?–1977). The hermit of Possum Key, allowed to stay by the NPS until 1972.

Davis, C. Kay (Dates unknown). As head of the U.S. Soil Conservation Service in Florida, he prepared a survey of Everglades soils in the 1940s.

Dean, Henry (Birth date unknown). Executive director, SFWMD, 2001–2005.

Demaray, Arthur (1887–1958). Long-time NPS official who served as NPS director from April to December 1951.

Devereaux, Colonel Alfred B., Jr. (1937–2008). The Corps’ Jacksonville district engineer from 1981 to 1984.

D’Ewart, Wesley A. (1889–1973). DOI assistant secretary for public land management, 1955–1956.

Dickenson, Russell E. (1923–2008). NPS director, 1980–1985.

Disston, Hamilton (1844–1896). Philadelphia saw and file manufacturer who bought four million acres in the Everglades in the 1880s and tried to drain and reclaim them.

Dodd, Colonel Alan M. (Birth date unknown). The Corps' Jacksonville district engineer from June 2012; U.S. Military Academy class of 1989.

Doty, Cecil (1907–1990). Oklahoma-born and -educated architect employed by the NPS from the 1930s until his 1968 retirement. Influential force in the Mission 66 program and creator of basic architectural plan for Flamingo, which was later refined by Harry L. Keck.

Douglas, Marjory Stoneman (April 7, 1890–May 14, 1998). Journalist, author, and conservationist. Original member of the Tropic Everglades National Park Association. Published *Everglades, River of Grass* in 1947. Founded Friends of the Everglades in 1969 and was a prominent advocate for the Everglades from then until her death.

Drury, Newton B. (1889–1978). Long-time executive director of the Save-the-Redwoods League, he was director of the NPS from 1940 to 1951. He was director when Everglades was established in 1947.

Dunlop, Becky Norton (Born 1951). Assistant secretary for fish, wildlife, and parks, 1987–1989.

Elliot, Fred C. (1878–1963). Chief engineer and secretary to the board of Florida's Internal Improvement Fund. Chief drainage engineer for Everglades Drainage District. Author of 1911 report on Everglades drainage.

Ernst, Roger C. (1914–2003). DOI assistant secretary for public land management, 1957–1960.

Estenoz, Shannon (Born 1968). Appointed director of the DOI's Office of Everglades Restoration Initiatives in November 2011.

Everhardt, Gary (Born 1936). NPS director, 1975–1977.

Fairchild, Dr. David (1869–1954). Botanist and plant explorer for the U.S. Department of Agriculture. Coconut Grove resident from 1926. First president of the Tropical Everglades National Park Association and founder of Fairchild Tropical Botanic Garden.

Fanjul, Alfonso "Alfy," Jr. (Born 1937). Part of the extended Cuban-American family with major sugar operations in Florida.

Fanjul, Jose “Pepé” (Born 1944). Part of the extended Cuban-American family with major sugar operations in Florida.

Fascell, Dante (1917–1998). Congressman from South Florida from 1955 to 1992. A consistent advocate for Everglades National Park, he played an important role in brokering an agreement with the Collier family in the 1950s to get more land for the park. Instrumental in the establishment of Biscayne National Park and Big Cypress National Preserve. The visitor center at Biscayne National Park bears his name.

Finch, Frank R. (Dates unknown). Executive director, SFWMD, 1999–2001.

Flagler, Henry (1830–1912). Railroad and resort tycoon, more responsible than anyone for opening the Atlantic coast of Florida to development. His Model Land Company had extensive holdings in the Everglades that eventually became part of Everglades National Park.

Fletcher, Duncan U. (1859–1936). Senator from Florida who introduced a bill for an NPS evaluation of the Everglades and the park’s authorizing act.

Fullerton, Colonel Avery S. (1928–1997). The Corps’ Jacksonville district engineer from 1970 to 1972.

Gabrielson, Ira (1889–1977). Director of the U.S. Fish & Wildlife Service from 1940 to 1946, he agreed to administer a portion of the Everglades as wildlife refuge until it became a national park.

Ghezzi, Edward M. (Dates unknown). Local associated architect for Shark Valley Lookout Tower.

Gifford, Edith Wright (~1850–1921). Miami area conservationist and club woman who helped to create and maintain Royal Palm State Park; married to John C. Gifford.

Gifford, John C. (1870–1949). Professor of Tropical Forestry at the University of Miami and proponent of the Everglades National Park project; married to Edith Wright Gifford.

Gilchrist, Albert (1858–1926). Governor of Florida, 1909–1913.

Glasgow, Leslie (1914–1980). Assistant secretary for fish, wildlife and parks in the Nixon administration, April 1, 1969–November 30, 1970.

Goggin, John (1916–1963). Pioneer of professional archeology in Florida, Goggin worked in Everglades National Park and elsewhere in South Florida.

Gore, Albert, Jr. (Born 1948). Vice president under Bill Clinton, 1993–2001, Gore refused to take a position in the 2000 election campaign on the redevelopment of Homestead Air Force Base.

Graham, D. Robert “Bob” (Born 1936). Son of dairyman and developer Ernest Graham, he was governor of Florida, 1979–1987, launching the Save Our Everglades initiative. As U.S. senator from 1987 to 2005, he was a steady friend of Everglades National Park and helped enact the CERP in 2000.

Graham, Ernest “Cap” (1886–1957). Florida dairyman, developer, and state senator; father of Bob Graham.

Grosskruger, Colonel Paul L. (Birth date unknown). District engineer for the Corps’ Jacksonville District from 2006 to 2009; U.S. Military Academy class of 1983.

Guillory, Blake C. (Birth date unknown). Executive director of the SFWMD from September 2013.

Hardee, Cary (1876–1957). Governor of Florida, 1921–1925.

Harney, Brigadier General William S. (1800–1889). Commander in the First Seminole War. The Harney River is named for him.

Harriman, Constance B. (Birth date unknown). Assistant secretary for fish, wildlife and parks in George H. W. Bush administration.

Hartzog, George (1920–2008). NPS director from 1964 to 1972.

Hathaway, Stanley K. (1924–2005). Served as secretary of the interior under President Ford from June to October 1975.

Henshall, James A. (1836–1925). Renowned angler and author of *Camping and Cruising in Florida*, 1884.

Herbst, Robert L. (Born 1935). Assistant secretary for fish, wildlife, and parks in the Carter administration, 1977–1980.

Hickel, Walter J. (1919–2010). Alaska native who was secretary of the interior, 1969–1970; vocally declared war on alligator poachers in the Everglades.

Hodel, Donald P. (Born 1935). Secretary of the interior in the Reagan administration, 1985–1989.

Hodgson, Casper W. (Dates unknown). Founder of World Book Company. Member of the executive board of National Parks Association

Holota Micco, see Bowlegs, Billy.

Holland, Spessard L. (1892–1971). Governor of Florida, 1941–1945; U.S. Senator from Florida, 1946–1971. Instrumental in achieving compromise on mineral rights and other issues leading to establishment of Everglades National Park in 1947. Advanced the park's interests as senator.

Horn, William P. (Born 1950). Assistant secretary for fish, wildlife and parks in the Reagan administration.

House, Lloyd (Dates unknown). Operator of a fish house at Flamingo who was evicted in 1951.

Hrdlička, Aleš (1869–1943). Czech-born anthropologist who surveyed prehistoric sites in South Florida and wrote *The Anthropology of Florida*, published in 1925.

Hyde, Bolivar F., Jr. (Dates unknown). Executive director, South Florida Flood Control District, 1956–1958.

Ickes, Harold L. (1874–1952). Secretary of the interior, 1933–1946, as well as administrator of the New Deal's Public Works Administration. In theory, a strong supporter of wilderness parks but not consistently in practice.

Ingraham, James E. (1850–1924). Key member of Henry Flagler's management team who headed the Model Land Company; Ingraham Highway was named for him.

Irwin, Coleman (Dates unknown). Operator of a fish house at Flamingo who was evicted in 1951.

Jackson, Andrew (1767–1845). Headed U.S. forces in the First Seminole War, 1817–1818, before serving two terms as president, 1829–1837. The city of Jacksonville is named for him.

Jarvis, John (Birth date unknown). NPS director beginning in October 2009.

Jennings, May Mann (1872–1963). President, Florida Federation of Women’s Clubs, 1914–1917. Prime mover in establishing and protecting Royal Palm State Park. Wife of Florida Governor William Sherman Jennings.

Jennings, William Sherman (1863–1920). Governor of Florida, 1901–1905. Counsel to the board of trustees of the Internal Improvement Fund of Florida, 1905–1909. Married May Mann in 1891.

Jewell, Sally (Born February 21, 1956). Former chief operating officer of REI and National Parks Conservation Association board member who became the secretary of the interior in April 2013.

Johns, Charley Eugene (1905–1990). Florida governor from September 1953 until January 1955. Opposed to the expansion of Everglades National Park beyond its 1950 boundary, he ran unsuccessfully for a full term as governor in 1954.

Jones, Johnny (1932–2010). Plumber and avid outdoorsman who became executive director of the Florida Wildlife Federation and lobbied tirelessly for conservation measures.

Jones, Paul Tudor (Born 1954). Tremendously successful investment fund manager who co-founded the Everglades Foundation with George Barley.

Keck, Harry L. (Dates unknown). Coral Gables architect who designed the Flamingo visitor center.

Kellogg, Vernon (1867–1937). Entomologist and evolutionary biologist who lobbied the interior department to protect biological values in the proposed Everglades park.

Kelly, Dr. Howard A. (Dates unknown). Baltimore surgeon and avocational naturalist who unintentionally disrupted 1930 U.S. House of Representatives hearings on an Everglades National Park bill by displaying a live king snake.

Kempthorne, Dirk (Born 1951). Secretary of the interior in the George W. Bush administration, 2006–2009.

Kennedy, Roger G. (1926–2011). NPS director, 1993–1997, during the first Clinton administration, after a long tenure as director of the Smithsonian’s National Museum of American History.

Kirk, Claude Roy, Jr. (1926–2011). Governor of Florida, 1967–1971, Kirk appointed Nathaniel Reed as his environmental advisor.

Kirkpatrick, Colonel Elmer E. (1905–1990). The Corps' Jacksonville district engineer from 1955 to 1957.

Kleppe, Thomas S. (1919–2007). Secretary of the interior in Ford administration, 1975–1977.

Krug, Julius A. (1907–1970). Secretary of the interior in Truman administration, 1946–1949. Spoke at dedication of Everglades National Park in December 1947.

Leach, Gilbert D. (1881–1960). Publisher of the *Leesburg Commercial* newspaper and member of the second version of the Everglades National Park Commission.

Lee, Charles (Birth date unknown). Long-time Florida environmentalist, now director of advocacy for Florida Audubon, he played a major role in keeping together the coalition behind the CERP.

Lee, Colonel Emmett C., Jr. (Dates unknown). The Corps' Jacksonville district engineer from 1972 to 1975; U.S. Military Academy class of 1950.

Leopold, Aldo (1887–1948). Forester, ecologist, and co-founder of the Wilderness Society in 1935, he wrote *A Sand County Almanac* (1949), a key document in modern environmental thought.

Leopold, Dr. A. Starker (1913–1983). Forester, zoologist, and conservationist (eldest son of Aldo Leopold), he was the principal author of 1963's "Wildlife Management in the National Parks."

Leopold, Dr. Luna (1915–2006). Leading expert in fluvial geomorphology and son of land-use ethic pioneer Aldo Leopold. Luna Leopold was the lead author of the joint Interior/Transportation report on the proposed Big Cypress Jetport.

Lehtinen, Dexter (Born 1946). Acting U.S. attorney for the Southern District of Florida who in 1988 brought suit against the state of Florida on behalf of the NPS over water pollution in the Everglades. He later was counsel to the Miccosukee Tribe.

Lewis, Orme (1903–1990). DOI assistant secretary for public land management, 1953–1955.

Loesch, Harrison (1916–1997). DOI assistant secretary for public land management, 1969–1973.

Ludwig, Daniel K. (1897–1992). Industrialist and shipping tycoon who purchased acreage on the shores of Biscayne Bay and in 1962 announced plans for an oil refinery, seaport, and industrial park.

Lujan, Manuel, Jr. (Born 1928). Secretary of the interior in George H. W. Bush administration, 1989–1993.

Lunsford, Dr. Edwin (Dates unknown). Miami dentist who bought acreage at Cape Sable in the 1940s in the confident, but ultimately unfounded, hope that the NPS would let him develop a resort there.

Mack, Connie, III (Born 1940). Grandson of legendary Philadelphia Athletics owner and manager Connie Mack, he represented Florida in the U.S. Senate from 1989 to 2001, lending Republican support to the Clinton administration's CERP proposal.

MacKay, Kenneth Hood "Buddy," Jr. (Born 1933). Lieutenant governor of Florida under Lawton Chiles, 1991 to December 12, 1998. Upon Chiles's death, MacKay was governor until January 5, 1999, when Jeb Bush was sworn in.

MacKaye, Benton (1879–1975). Forester and conservationist who first conceived the Appalachian Trail; a co-founder of the Wilderness Society in 1935.

Mainella, Fran P. (Born 1947). Director of Florida state parks for twelve years, Mainella was NPS director, 2001–2006, in George W. Bush administration.

Maloy, John R. (Dates unknown). Executive director, SFWMD, 1975–1984.

Manson, H. Craig (Dates unknown). Assistant secretary for fish, wildlife, and parks in George W. Bush Administration, Feb. 2002–Dec. 2006.

Marshall, Arthur R. (1919–1985). Marine biologist and conservationist with U.S. Fish and Wildlife Service, University of Miami and University of Florida. Author of the "Marshall Plan" in the 1980s, the first comprehensive plan for Everglades restoration.

Marshall, Robert (1901–1939). Forester who played a seminal role in developing wilderness areas in national forests and a co-founder of the Wilderness Society in 1935.

Martin, John (1884–1958). Florida governor, 1925–1929.

Martinez, Robert “Bob” (Born 1934). As governor of Florida, 1987–1991, he cautiously continued Bob Graham’s environmental initiatives and was none too pleased when Acting U.S. Attorney Dexter Lehtinen sued the state over water quality.

Masland, Frank E., Jr. (1915–1993). Pennsylvania carpet manufacturer and long-time member of NPS advisory board. Played crucial role in lining up conservation organizations in opposition to a jetport in the Big Cypress.

Mather, Stephen T. (1867–1930). First director of the NPS, serving 1917–1929. Mather had just one meeting with Ernest F. Coe before a massive stroke made it impossible for him to continue as director.

May, Colonel James G. (Birth date unknown). Commander of the Corps’s Jacksonville District from 2000 to 2003.

Mayo, Nathan (1876–1960). Florida’s commissioner of agriculture from 1923 to 1960.

McCarty, Daniel T. (1912–1953). Inaugurated governor of Florida in January 1953; died in office on September 28, 1953.

McElhenny, Colonel John F. (Dates unknown). The Corps’ Jacksonville district engineer from 1968 to 1970.

McFarland, J. Horace (1859–1948). Urban and regional planner and conservationist. President of the American Civic Association, 1904–1924.

McKay, Douglas (1893–1959). Secretary of the interior in Eisenhower administration, 1953–1956.

Meeker, Mellissa L. (Birth date unknown). Executive director, SFWMD, 2011–2013.

Megee, Garnett (Dates unknown). Miami artist who designed the Everglades National Park commemorative stamp issued in December 1947.

Menéndez de Avilés, Pedro (1519–1574). Spanish governor of Florida and founder of the city of St. Augustine, he established short-live outposts in the territory of the Calusa and Tequesta.

Merriam, Dr. John (1869–1945). Paleontologist, president of Carnegie Institution, 1920–1938. Prime mover on NPS educational committee in 1920s, important in defining qualities of the “primitive” in natural areas. Member of the executive board of the National Parks Association.

Miller, Colonel Joe R. (Birth date unknown). Commander of Corps's Jacksonville District from 1997 to 2000; U.S. Military Academy class of 1974.

Milson, Colonel Bruce A. (Dates unknown). The Corps' Jacksonville district engineer from 1989 to 1992.

Moore, Clarence Bloomfield (1852–1936). Avocational archeologist from Philadelphia who did extensive fieldwork in the American South, including the Ten Thousand Islands and adjacent mainland areas.

Moore-Willson, Minnie (1859–1937). Energetic advocate of the Seminole Indians and author of *The Seminole Indians of Florida*, first published in 1895.

Morton, Rogers C. B. (1914–1979). Secretary of the interior in Nixon and Ford administrations, 1971–1975, he tapped Nathaniel Reed as assistant secretary for fish, wildlife, and parks. Morton and Secretary of Transportation John Volpe agreed to prevent the jetport in the Big Cypress Swamp.

Mosier, Charles (Dates unknown). First warden/caretaker of Royal Palm State Park.

Mott, William Penn, Jr. (1909–1992) NPS director in Reagan and George H. W. Bush administrations, 1985–1989.

Munroe, Kirk (1850–1930). Coconut Grove writer and conservationist; married to Mary Barr Munroe.

Munroe, Mary Barr (1852–1922). Coconut Grove conservationist and club woman who helped to create and maintain Royal Palm State Park; married to Kirk Munroe.

Musgrove, Martha (Dates unknown). Long-time reporter and member of the editorial board at the *Miami Herald* who took a special interest in the Everglades.

Myers, Colonel Charles T., III (Dates unknown). The Corps' Jacksonville district engineer from 1984 to 1987.

Neely, Burkett S., Jr. (Dates unknown). Manager of the Arthur R. Marshall Loxahatchee National Wildlife Reserve from 1982 to 1998, at the time that U.S. attorney Dexter Lehtinen filed the water quality lawsuit.

Norton, Gale A. (Born 1954). Secretary of the interior in George W. Bush administration, 2001–2006.

Nye, Gerald P. (1892–1971). North Dakota senator who led a December 1930 inspection tour of the Everglades; not to be confused with NPS Director Albright's February 1930 trip.

Ogden, John C. (1938–2012). Ornithologist and expert on Florida wildlife who worked at Everglades National Park and with the Florida Audubon Society.

Olmsted, Frederick Law, Jr. (1870–1957). Landscape architect and long-time advisor to NPS directors. Wrote key section of NPS organic act (1916). With William Wharton, conducted inspection trip of Everglades. Member of the executive board of National Parks Association.

Olson, Sigurd F. (1899–1982). Conservationist and author who was president of The Wilderness Society from 1963 to 1971.

Owen, Ruth Bryan (1885–1954). Member of the U.S. House of Representatives for South Florida from 1929–1933; daughter of William Jennings Bryan. Introduced the first authorizing act for Everglades National Park, which failed to pass.

Ozmer, Roy (?-1969). Hermit of Pelican Key, allowed to remain when NPS took over the key.

Palmer, G. O. (Dates unknown). Florida attorney who was appointed executive chairman of the Everglades National Park Commission by his cousin, Governor Fred P. Cone, serving 1937–1944.

Pantano, Colonel Alfred A., Jr. (Birth date unknown). The Corps' Jacksonville district engineer from 2009 to 2012.

Parfitt, Colonel H. R. (Dates unknown). The Corps' Jacksonville district engineer from 1962 to 1963.

Parker, Garald (1905–2000). Pioneer of South Florida hydrology and groundwater studies, he provided much of the background information for Marjory Stoneman Douglas's *River of Grass*.

Pearson, Colonel Richard W. (Dates unknown). The Corps' Jacksonville district engineer from 1949 to 1952.

Pearson, Dr. T Gilbert (1873–1943). Ornithologist and president of National Association of Audubon Societies, 1920–1934; member of the 1930 NPS party investigating the suitability of the Everglades as a national park.

Pennekamp, John (1897–1978). Reporter, columnist, and editor for the *Miami Herald*, he was on the second version of the Everglades National Park Commission and was a key player in engineering the deal in the 1940s that got the park established. John Pennekamp Coral Reef State park is named in his honor.

Pepper, Claude (1900–1989). New Deal stalwart and Florida senator from 1936–1951 and congressman from Miami from 1963 until his death in 1989.

Perrine, Dr. Henry (1797–1840). Physician and horticulturalist given a section of land in the Everglades by the federal government to experiment with tropical plants. Killed by Chekika and a band of Indians during the Second Seminole War.

Peterson, J. Hardin (1894–1978). Florida congressman who was chairman of the Everglades National Park Association.

Phillips, William Lyman (1885–1966). Landscape architect who oversaw the Civilian Conservation Corps work at Royal Palm State Park and later laid out Fairchild Tropical Botanical Garden.

Pimm, Stuart (Born 1949). A biologist, ecologist, and long-time faculty member of Duke University who criticized early versions of the CERP.

Plant, Henry (1819–1899). Railroad and steamship tycoon who built a rail line down the Gulf coast of Florida.

Podgor, Joe (Born 1946). Executive director of Friends of the Everglades for eleven years until discharged by the organization's board in 1995.

Ponce de León, Juan (1474–1521). Spanish conquistador and explorer who visited Florida in 1513 and 1521 and named it.

Poole, Samuel E., III (Birth date unknown). Executive director, SFWMD, 1994–1999.

Randolph, Isham (1848–1920). Hydraulic engineer who authored a 1913 report on Everglades drainage.

Raven, Peter (Born 1936). Biologist, ecologist, and long-time director of the Missouri Botanical Garden, he reviewed CERP for National Academy of Science.

Redford, Polly (1925–1972). South Florida environmentalist who was active in the campaign to establish Biscayne National Park.

Reed, Nathaniel (Born 1933). Long-time promoter of environmental causes in Florida, Reed was special assistant on the environment to Governor Claude Kirk, 1967–1971; assistant secretary for fish, wildlife, and parks, 1971–1977, in Nixon and Ford administrations.

Rice, Colonel Terry L. (Birth date unknown). Commander of Corps's Jacksonville District from August 1994 to October 1997; U.S. Military Academy class of 1969. Rice later was a consultant to Miccosukee Tribe.

Ridenour, James M. (Born 1942). NPS director, 1989–1993, in George W. Bush administration.

Robbins, William J. (1890–1978). Prominent biologist who was the principal author of “A Report by the Advisory Committee to the National Park Service on Research,” August 1963, commissioned by the NPS from the National Academy of Science.

Roberts, Loren (Dates unknown). Operator of a fish house at Flamingo who was evicted in 1951.

Robertson, Dr. William B. “Bill,” II (1924–2000). Scientist who worked at Everglades National Park from 1951 to his retirement in 1997. Known for his work with park bird populations and on the role of fire in maintaining ecological conditions.

Ros-Lehtinen, Ileana (Born 1952). Congresswoman from South Florida since 1989. Spouse of Dexter Lehtinen.

Safford, William E. (1859–1926). Botanist, ethnologist, and educator who did pioneering early work on South Florida environments. Author of *The Natural History of Paradise Key and the Nearby Everglades of Florida*, 1919.

Salazar, Kenneth L. (Born 1955). Secretary of the interior in Obama administration from January 2009 to April 2013.

Salt, Colonel Terrence C. “Rock” (Birth date unknown). The Corps' Jacksonville district engineer from 1991 to 1994; U.S. Military Academy class of 1966. He later held positions in DOI and the Department of the Army.

Schull, Colonel Herman W. Jr. (Dates unknown). The Corps' Jacksonville district engineer from 1952 to 1955.

Scott, Rick (Born 1952). Governor of Florida, inaugurated 2011 and running for reelection in 2014.

Seaton, Fred Andrew (1909–1974). Kansas Republican who was secretary of the interior in Eisenhower Administration, 1956–1961.

Severud, Gordon (1909–1998). Miami-based architect who in the 1950s was commissioned to design the Flamingo lodge buildings, marina services building, and gas station.

Shelford, Victor E. (1877–1968). Professor at the University of Illinois and pioneer of the field of ecology.

Sholtz, David (1891–1953). A vice president of the Everglades National Park Association and governor of Florida 1933 to 1937; appointed members of first version of the Everglades National Park Commission, with Ernest F. Coe as executive chairman.

Simmons, Glen (1916- 2009). Alligator hunter and Gladesman. Wrote *Gladesmen: Gator Hunters, Moonshiners and Skiffers* with Laura Ogden.

Simpson, Charles Torrey (1846–1932). Expert on mollusks who from his home at Lemon City on Biscayne Bay made many collecting trips in the Everglades.

Small, John Kunkel (1869–1938). Botanist who specialized in Florida plants, particularly hammock vegetation.

Smallwood, Charles Sherod “Ted” (?–1951). He and his wife Mamie were proprietors of a general store in Chokoloskee.

Smallwood, Mamie House (?–1943). She and her husband Ted were proprietors of a general store in Chokoloskee.

Smathers, George A. (1913–2007). Democratic senator representing Florida, 1951–1969, who helped shepherd Everglades legislation through the Congress.

Smith, Anthony Wayne (1906–1992). Associated with the Congress of Industrial Organization for twenty years, Smith headed the National Parks Association, 1958–1980.

Smith, McGregor (1899–1972). President of Florida Power & Light in the 1940s who gave substantial legal and logistical support to the establishment of Everglades National Park.

Smith, Thomas Buckingham (1810–1871). St. Augustine lawyer and avocation historian whose 1848 report concluded that the Everglades could be successfully drained.

Smith, Walter (Dates unknown). Flamingo resident who shot and killed Audubon warden Guy Bradley in 1905. A Key West jury believed his claim that it was in self-defense and declined to convict him.

Sollohub, Colonel Julian V. (1916–?). The Corps' Jacksonville district engineer from 1960 to 1962.

Soucie, Gary A. (Birth date unknown). Environmentalist employed by the Sierra Club and the Friends of the Earth and editor of *Audubon* magazine.

Stanton, Robert (Born 1940). NPS director, 1997–2001, during second Clinton administration.

Stein, Clarence S. (1882–1975). Architect and urban planner who was close to many of the founders of the Wilderness Society.

Stoneman, Frank (1857–1941). Publisher of the *Miami Herald* and father of Marjory Stoneman Douglas.

Strahl, Dr. Stuart D (Born 1955). As head of Florida Audubon, Strahl led the NGO contingent in getting the CERP enacted.

Strickland, Thomas L. (Birth date unknown). DOI assistant secretary for fish, wildlife and parks, 2009–2011.

Sullivan, Donald and Jeannette (Dates unknown). Last caretakers at Royal Palm State Park.

Tabb, Colonel R. T. (Dates unknown). The Corps' Jacksonville district engineer from 1965 to 1968.

Taylor, Oliver G. (Dates unknown). Long-time NPS engineer who was part of team that looked into Everglades boundary question in late 1934.

Teak, Colonel Willis E. (Dates unknown). The Corps' Jacksonville district engineer from 1947 to 1949.

Thompson, Benjamin H. (1904–1997). Zoologist and wildlife specialist with the NPS who was involved with Everglades National Park boundary issue in 1930s.

Toll, Roger W. (1883–1936). Yellowstone National Park superintendent and member of the 1930 NPS party investigating the suitability of the Everglades as a national park, Toll died in the same New Mexico automobile accident that killed George Wright, chief of the NPS wildlife branch.

Train, Russell E. (1920–2012). Undersecretary of the interior in Nixon Administration, 1969–1970; chair, Council on Environmental Quality, 1970–1973; first administrator, Environmental Protection Agency, 1973–1977.

Trammell, Park (1876–1936). Governor of Florida, 1913–1917; U.S. Senator from Florida from 1917 until his death in 1936.

Troxler, Colonel Paul D. (1905-unknown). The Corps' Jacksonville district engineer from 1957 to 1960.

Udall, Steward L. (1920–2010). The only person to serve as secretary of the interior in the Kennedy and Johnson administrations, 1961 to 1969, he pressed the Corps of Engineers to get more water to Everglades National Park.

Umphey, J. F. (Dates unknown). Homestead contractor for Royal Palm lodge and outbuildings in 1910s.

Vignoles, Charles (1793–1875). Surveyor, believed to be the first to use the term “Everglades” in print.

Vint, Thomas C. (1894–1967). Long-time NPS chief of planning and construction who supported keeping the Ingraham Highway as the main park road.

Vinten, C. Raymond (1895–1983). Coordinating superintendent for southeastern parks and monuments, 1942–1951, Vinten was the director's point man on the Everglades project through the late 1940s.

Volpe, John A. (1909–1994). As President Nixon's secretary of transportation from 1969 to 1973, Volpe agreed not to develop a jetport in the Big Cypress Swamp.

Wade, Malcolm “Bubba” (Birth date unknown). Long part of the management team of the U.S. Sugar Corporation, Wade represented the sugar industry in many negotiations and conflicts.

Wainwright, Alice C. (1907–1991). Conservationist and first woman on Miami City Council.

Walker, Ronald H. (Born 1937). NPS director, 1973–1975, in Nixon administration; first director without a background in conservation or land management.

Wallis, W. Turner (Dates unknown). Executive director, South Florida Flood Control District, 1949–1956.

Ward, Dr. Henry Baldwin (1865–1945). A zoologist and parasitologist, Ward headed the Zoology Department at the University of Illinois from 1909 to 1933. He was active in the American Association for the Advancement of Science and was important in getting wilderness protection in the 1934 authorizing act for the Everglades.

Warren, Fuller (1905–1973). Governor of Florida from 1949 to 1953.

Watt, James G. (Born 1938). Secretary of the Interior, 1981–1983, in the Reagan administration, he attempted to reverse the decision to phase out commercial fishing in Everglades National Park.

Watson, J. Thomas (1886–1954). Florida attorney general from 1941 to 1949. As attorney general, sought to block state transfer of land for park. Ran unsuccessfully for the governorship in 1948.

Webb, James B. (1936–1997). Attorney and environmentalist, deputy assistant secretary in the Department of the Interior during the Carter administration. Championed Everglades causes as Florida director for The Wilderness Society and later in the society's Washington office.

Wehle, Carol Ann (Birth date unknown). Executive director, SFWMD, 2005–2011.

Whalen, William J. (1940–2006). NPS director, 1977–1980 during Carter administration.

Wharton, William P. (1880–1976). Board member of the Massachusetts Forest and Park Association, 1912–1976 and president, National Parks Association, 1936–1960. With Frederick Law Olmsted Jr. conducted an inspection trip to Everglades.

Wheelock, W. D. (Dates unknown). Warden at Royal Palm State Park in the 1920s.

Whitfield, Estus (Birth date unknown). Chief environmental advisor to four Florida governors from 1979 to 1999: Graham, Martinez, Chiles, and Bush. Instrumental in drafting the Save Our Everglades program with Governor Graham.

Wilbur, Ray Lyman (1875–1949). Secretary of the interior, 1929–1933; transmitted favorable report on proposed Everglades National Park to Congress in December 1930.

Wilcox, J. Mark (1890–1956). Congressman from Florida, 1933–1939, who served as president of Everglades National Park Association.

Williams, Major Archie P. (Dates unknown). Leader of an 1883 expedition in the Everglades sponsored by the *New Orleans Times-Democrat*.

Willoughby, Hugh L. (Dates unknown). Everglades adventurer who wrote *Across the Everglades: A Canoe Journey of Exploration*, 1898.

Wilson, Edward O. (Born 1929). Renowned biologist who did some of his early fieldwork on “island biogeography” in Everglades National Park. Wilson later participated in the National Academy of Science’s review of CERP.

Wirth, Conrad (1899–1993). Director, NPS, 1951 to 1964, and father of the Mission 66 program. Key decisions about the development of Everglades National Park were made during Wirth’s directorship.

Wisdom, Colonel Donald A. (Dates unknown). The Corps’ Jacksonville district engineer from 1975 to 1978.

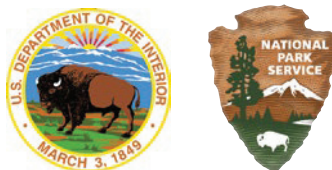
Wodraska, John (Dates unknown). Executive director, SFWMD, 1984–1991.

Work, Hubert (1860–1942). Colorado physician who was secretary of the interior, 1923–1928, in the Harding and Coolidge administrations.

Wright, George (1904–1936). As head of the NPS wildlife division, Wright visited the Everglades and gave his opinion that it could be developed for visitors without compromising its natural values. Killed in an automobile crash in New Mexico that also took the life of Yellowstone Superintendent Roger Toll.

Wright, James (Dates unknown). Engineer with the U.S. department of agriculture whose 1909 report on Everglades drainage vastly oversimplified the difficulties involved.

Yard, Robert Sterling (1865–1941). Played key role as publicist for NPS in 1916–1917. Executive secretary of the National Parks Association, 1919–1941. A co-founder of the Wilderness Society in 1935, he pressed the NPS to write wilderness protection into Everglades authorizing legislation.



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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