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Interpretive Prospectus

ORGAN PIPE CACTUS National Monument / Arizona

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INTERPRETIVE PROSPECTUS

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ORGAN PIPE CACTUS NATIONAL MONUMENT ARIZONA

Prepared by Division of Interpretive Planning Harpers Ferry Center

September, 1992

Approved by memorandum from Acting Regional Director Lew Albert, Western Region, Sept. 23, 1992

FOREWORD

The Interpretive Prospectus is the key to interpretive planning. It is primarily a media prescription, selecting the media that are best suited for the interpretation of the national monument's themes. The prospectus deals with wayside exhibits, audiovisual programs, museum exhibits, publications, and to some extent personal services. Personal services to be provided by the monument's interpretive staff will be treated in greater depth in an operations plan, prepared by the staff and called Annual Statement for Interpretation and Visitor Services.

No funding comes automatically as a result of the prospectus. Rather, it is the responsibility of the staff, in conjunction with the regional office, to use the programming process and other sources to fund implementation of the plan.



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THE RESOURCES

Organ Pipe Cactus National Monument is situated in the geographic heart of the Sonoran Desert. It protects several hundred thousand acres of this desert and was named in honor of the organ pipe cactus which reaches its northern limit here. The largest concentration of the cactus in the United States is found in the monument.

The species-rich Sonoran Desert is one of the four deserts of North America. Like all deserts it is an arid region in which the vegetation and wildlife are adapted to scanty rainfall with long intervals of heat and drought. The Sonoran occupies parts of Arizona and California in the U.S., and parts of Mexico's Baja California peninsula and the state of Sonora (for which it is named).

Deserts make up 3% of the land mass of North America, 12% to 18% of the world, according to various sources. It is believed that deserts have only been in their present locations since the last ice age. Deserts are mostly distributed between 20 and 30 degrees latitude in both hemispheres, in bands around the earth that result from circulation of the atmosphere. Adjacent high mountains can also intercept moisture, creating a desert on the leeward side of the range.

Temperature, amount of rainfall, and distribution of rainfall are among the factors determining the types of plants and animals that can survive in these places. Scientists recognize a gradient from cold to hot deserts. The Sonoran is classified as a hot desert.

National monument records show that in July thermometer readings average 103 degrees F. in the daytime. Eighty days per year have highs above 100 degrees while only 18 days experience lows to 32 degrees or below. In an average year only 9 inches of rain falls; it comes in two rainy seasons--in late summer and in winter.

The plants of the desert time their flowering and seed germination to survive the erratic rainfall patterns. Some plants--called succulents--store water against the drought. Twenty-nine species of cactus inhabit the national monument, including the water-storing saguaro and organ pipe cactus. The Cactaceae is, in fact, the most characteristic family of plants in this desert. In Organ Pipe Cactus NM plant communities of the Lower Colorado and Arizona Upland divisions of the Sonoran Desert have been identified: creosote bush/bursage, mixed scrub, saltbush, mixed cactus/palo verde, and jojoba/evergreen scrubland. Although the Central Gulf Coast division is Mexican in distribution, a few characteristic species are found in the monument--the elephant tree and senita cactus.

To predict where a particular plant species will be found, it is necessary to know the environmental conditions to which it is adapted: south facing rocky hillsides accommodate the organ pipe; saltbush shows up on salty low-lying basin floors; mountain canyons support jojoba and juniper. A uniform creosote bush/bursage community grows on low, flat terrain where rainfall is at its lowest and temperatures at their highest. The diverse mixed cactus/palo verde community spreads over bajada slopes. These last two plant communities cover most of the monument's land.

Like the plants, the animals found here have survived because of their ability to adapt to the climatic conditions. Insects are everywhere in the desert. Reptiles (including rattlesnakes), birds, desert pupfish, coyotes, peccaries, mule deer, foxes, pronghorns, and other animals make their home in this austere environment.

The landscapes are of comparatively recent origin. Volcanic activity in the Pleistocene shaped present day scenery. The products of this activity overlay older rocks of the late Tertiary, a period when widespread volcanic activity left lava flows and ash accumulations and built mountains. The Sonoran is considered to be part of the Basin and Range Province physiographically, with the typical low basins flanked by angular mountain ridges. Elevations in the monument range from about 1100 feet above sea level to 4808 feet, the highest point in the Ajo Mountains.

American Indians, Spanish explorers, missionaries, ranchers and miners have passed this way, in some cases lived here for a time and left traces: mines, hardscrabble ranches, wells, pictographs.

The first human occupants of the region were American Indians. It is generally accepted that evidence supports a 12,000 year span of occupation by Indians of various cultural groups. During this time the climate has varied, with periods of more rainfall; in times of arid conditions adaptive strategies coped with the increased difficulty in making a living. In historic times the Hia C'ed O'odham and Tohono O'odham (two Papago groups) are known to have used the area now included in Organ Pipe Cactus NM. Both used wild plants and animals. This way of life involved some mobility to travel to good sources of mesquite beans, saguaro fruits, salt, and so on. In such a rigorous environment survival depended on detailed knowledge of the natural world and diversification. Agriculture was engaged in by the Tohono O'odham, with a pattern of seasonal occupation of summer and winter villages. Drought resistant species of corn and beans made the most of very little rainfall, sometimes permitting two crops during one growing season. Some of these survival techniques are still known to living members of the O'odham people.

In the European vanguard in the mid-16th century was the Spanish explorer, Captain Diaz of Coronado's expedition. The famous Jesuit priest, Father Kino, visited the area at the turn of the 17th century. Other missionaries followed in his steps. Many early travelers used the notorious Camino del Diablo, with Quitobaquito Spring as one of the watering places along the route. Border and railroad surveyors also passed through the area. And, as a result of the Mexican Civil War and subsequent unrest, part of the present day monument gave refuge to supporters of Pancho Villa and Carranza. Over the years, a series of miners excavated small scale diggings which never produced great rewards. But the miners and ranchers give a taste of what life was like on the American frontier. These pioneers lived a less regimented life, coped in some ingenious ways with a difficult environment; their activities have marked the land in ways that are still in evidence.

While the region has a long human history, it remains remote and sparsely settled.

Significance of the Resources

The desert climate and the strange appearance of plants characteristic of its regime have created an atmosphere that has never been comfortable for the newer arrivals--Western Europeans who settled in the United States, and their descendants who moved across the continent in waves. The desert did not look like home in the old country or like the lush east coast of the U.S. From this perspective it is easy to understand a common attitude toward arid lands--that they are wastelands, places tolerable only after major engineering efforts. John Wesley Powell had this to say in an 1879 report: "The redemption of the Arid Region involves engineering problems requiring for their solution the greatest skill....[in this report his purpose was] to make suggestions for the legislative action necessary to inaugurate the enterprises by which these lands may eventually be rescued from their present worthless state." Perhaps Powell was prophesying the Central Arizona Project.

More recent writers have described deserts "on the march" and the "desertification" problems in the world. Desert, in popular usage, has come to describe a place which has lost its forest cover, suffered from erosion of topsoil, overgrazing, and in most ways is a degraded and unproductive place. Although environmental degradation is certainly happening, it is unfortunate that the word desert has become associated with it. Deserts have also been pictured as the place where a ragged figure crawls over hot sands to a mirage of a lake shimmering in the distance. The kernel of truth about low moisture and high temperature conditions has been heaped with all sorts of cultural baggage.

In actuality, the desert, the Sonoran Desert in this case, is a biological tour de force. It displays wonderfully variegated life forms, thorny branches, accordian pleats, leaves that fall to reduce water loss, chlorophyll-containing stems to augment scanty foliage, elegant symmetries of spines, lizards of amazing profusion and color, birds that somehow manage to nest in spiny plants. When the saguaro blooms, green arms seem to proffer bouquets. Far from being a waste place, the Sonoran is often described as arboreal, for the plentitude of tree-sized plants.

During at least half of the year the mild temperatures and clear skies make it a magnet, attracting people from places that are not equally blessed with such winter weather. Some of these only come for a visit; others decide to stay yearround. The latter group, thanks to engineered water projects and air conditioning, can survive the summer and the drought. They have not adapted. They have created a new environment. Their numbers are swelling rapidly in the southwest. Many do not understand the desert and, in fact, frequently forget they live in one. Surrounded by green lawns and swimming pools, it is easy to forget.

So, for urban desert dwellers and park visitors we should strive to convey the significance of a desert as a biologically diverse ecosystem adapted to its environment. The myth of a wasteland must be laid to rest. An earlier traveler in these parts, William Hornaday, best described the proper attitude: "If you enter the deserts to study them, go in a receptive and tolerant frame of mind....Go with an open mind; for the [arid] voices...are entitled to a hearing..." He suggested looking at the desert as a whole first, then analyzing its component parts. This is good advice for travelers, residents, and for interpreters. For people with an open mind, the Sonoran Desert is a revelation.

Humans as park visitors and as urban dwellers in the desert, though, are not the whole story. Missionary, frontier soldier, colonizer, surveyor, farmer, rancher, outlaw, miner, rustler, and Villista have passed this way. The Organ Pipe Cactus region has been described by historian Bill Brown as an "anachronistic frontier until just yesterday.... It is marginal history because this was marginal country. The history here is the sweating, grunting kind of history. It's 50 cubic yards of solid rock piled outside an empty hole on a mountain side. It's a deserted mesquite jacal with the wind whipping through, rattling a pile of rusty tin cans. It's a rock grave on the Camino del Diablo. It is a history of lonesome hopes, lonelier failure, small victories.... It is a history of human ecology on an outback frontier. The sites and structures illustrating this story do not recall great events; they hint at what it was like to live or pass through this country before modern amenities softened its rough edges." The sites and structures also record human impact, sometimes not a positive one, but instructive nonetheless.

Beyond the miners and ranchers and people of that ilk, there were others: the American Indians, people like the Tohono O'odham whose agriculture made the most of the scanty rainfall, whose hunting and gathering techniques took advantage of what was naturally available, whose population numbers could not, without dire consequences, exceed the land's carrying capacity.

Human ecology is the other overriding story of significance. It would be unrealistic to expect water projects to be dismantled and Phoenix depopulated as a result of wider appreciation for the significance of desert and the human impacts and interactions with it. On the other hand, exposure to this message might change the balance a bit, so that adaptation is considered as valid a strategy as engineering, and that conservation and living more harmoniously with the desert environment gains in respectability.

LEGISLATIVE HISTORY

The national monument was established in 1937 to protect part of the Sonoran Desert, including the largest concentration of organ pipe cactus in the United States. This is a common species in Mexico but rare in the U.S. The legislation also mentions "various objects of historic and scientific interest" to be protected in the reserved land.

Lands within the monument have been subjected to mining activities on and off since the late 1880s. In 1976 the mining in parks act was passed and effective 1978, all recorded claims were subsequently eliminated. Mining no longer takes place within the boundaries.

Grazing, too, has impacted the monument. It was permitted until 1978. One area on the eastern side of the monument is still designated for use by livestock of the Tohono O'odham Indians. (Their right to gather cactus fruits in the monument was recognized in the monument's establishing act.)

In 1976 the monument was designated as an International Biosphere Reserve under the UNESCO Man and the Biosphere Program. The intent of the program is to protect samples of the world's major ecosystems and demonstrate a positive relationship between humans and their environment.

Of the monument's 330,690 acres, 312,600 have been designated as wilderness (1978).

Five areas of the monument are on the National Register of Historic Places: Bull Pasture, Gachado Well and Line Camp, Victoria Mine, Growler Mine, and Milton Mine. Four others have been nominated: Quitobaquito Spring, Blankenship Well and Dos Lomitas Ranch, Bates Well and Ranch, and Montezuma's Head. The latter was nominated as a traditional cultural property of importance to the Tohono O'odham Indians. Most of these sites are of local and state significance rather than national significance.

There have been other legislative actions over the years that have been considered. In 1965 a proposal for a Sonoran Desert National Park was prepared but to date has not been acted upon. It involved an increase in the size of the monument. However, there is continuing interest in



establishing an international biosphere reserve as a joint effort between the U.S. and Mexico and including Organ Pipe Cactus and the Pinacate protected area. It has also been suggested that the existing monument (without boundary changes) be renamed for the Sonoran Desert to lessen the focus on the organ pipe cactus and change the emphasis from a single species to an entire ecosystem.

Purpose

Based on legislation and on planning sessions related to the current GMP project, the purpose of the monument has been determined to be:

Perpetuate for future generations a representative sample of the natural and cultural resources of the Sonoran Desert and provide for public understanding, use, and enjoyment of those resources.

Serve as a natural laboratory for understanding and managing Sonoran Desert ecosystems.

Serve as a baseline indicator against which environmental changes can be identified.

Preserve for future use and enjoyment the character and values of designated wilderness within the monument.

THE VISITORS

To experience the monument in mid-summer is to fully appreciate that Organ Pipe Cactus is well-classified as a hot desert. Climate has imposed a distinctive pattern on visitation here. Unlike most other parks, the peak number of visitors is reached in the winter months of February and March. Because the optimum climatic conditions do not correspond with the timing of the typical American family vacation and the monument is located far from population centers, total annual visitation is still relatively light. Two hundred-fifty-thousand people over the period of a year in 516 square miles is a pleasant contrast to some other NPS areas.

Seasonal pattern of visitation



According to the Statement for Interpretation these are the seasonal characteristics of visitation:

<u>Fall</u> season brings day-use visitors from the Phoenix and Tucson areas. Weekend traffic is heavy between Phoenix/Tucson and Rocky Point, a popular beach in Mexico. Some weekenders use the campground, mostly as an overnight stop on their way into Mexico. Retired senior citizens start visiting the monument in October and by November, they represent most of the fall visitors. <u>Winter</u> brings an appreciable increase in the number and length of stay of visitors. Numbers increase around Thanksgiving, then drop back until after the Christmas holidays. Visitation then accelerates to a high in February and March. Most visitors during this time are retired senior citizens spending time in the warm southwest to escape the northern cold weather. This is the time of year when many visitors are drawn to the desert to enjoy and photograph the flower display.

Spring is a period when there are still Rocky Point visitors traveling through the monument and some senior citizens and other national visitors around, but once the temperatures reach 100 degrees F., people start leaving. The season comes to an end after the Easter holidays, with the advent of hot weather. Heat affects the personal comfort of the visitors and triggers movement out of the area. From then on the visitation pattern is similar to summer.

<u>Summer</u> visitation is composed of many foreign visitors. Central European and Scandinavian countries are frequently represented. Some American family units have the monument as their destination during the summer but the extreme heat discourages many. Weekend traffic in the visitor center area is largely composed of day-use individuals and transient highway traffic (mainly Arizona residents) going to and from Rocky Point (Puerto Peñasco), Mexico.

Organ Pipe Cactus is a destination park. Almost two-thirds of the visitors stay for two or more nights, and some may stay for the maximum allowable time in the campground.

Contrary to the pattern in many other parks, 70% of the visitors come from outside the local or regional area and 10% are international visitors. It is fair to conclude from this that park interpretation is not reaching to any significant degree the local and regional populations, groups having the most impact on desert ecosystems. On the other hand, interpretive efforts are increasing appreciation of deserts among people from far-flung locations.

Additional information about visitor use can be obtained from a 1989 survey. Its results must be evaluated carefully because the study was accomplished during the months of January and February. The difference between seasons at Organ Pipe Cactus is significant and results obtained at one season do not apply at other times. Nevertheless, for that particular time period, these statements can be made about visitors:

--94% use the visitor center. This is a much higher rate than in some other parks.

--90% use trails of varying lengths;

--73% are age 60 or older;

--40% are repeaters.

Among the opinions expressed by those surveyed, an increase in the number and range of lengths of trails was desired by 65% of the people.

Summary: As a consequence of climate and visitation patterns interpreters enjoy an interesting situation at Organ Pipe Cactus--visitors who are relatively unfamiliar with the desert, come at a time when it can be enjoyed in depth, and appreciate any and all programs and services that are offered. Their numbers are not overwhelming; interpreters can still have one-to-one contact with individuals. It is a nearly ideal situation for effective interpretation.

The Region

One of the interesting aspects of the region is that it is trinational: adjoining the monument on the east and south are the huge Tohono O'odham Reservation and the country of Mexico. Other U.S. government agencies manage large blocks of nearby land: the USFWS's Cabeza Prieta National Wildlife Refuge, the Barry M. Goldwater Air Force Range, and the Bureau of Land Management's property to the north.

Although of potential interest, neither the reservation nor the wildlife refuge are much visited by the public. The reservation has little in the way of facilities to accommodate such use. Some of the craft products made by Tohono O'odham artisans are displayed and sold at the heavily visited Kitt Peak National Observatory, which is on reservation land but operated by an association of universities. Crafts are also sometimes available along Highway 86 which passes through the reservation. Because the wildlife refuge is used by the Air Force for air-to-air gunnery practice, permits are required to visit and few people go there. As many as 5000 people are contacted at its Ajo offices, but only about 20% of these actually enter the refuge.

Population growth and development are surging in the Tucson and Phoenix areas; these urban areas affect the greater Sonoran Desert. They are two to three hours distant by automobile. The same trends across the Mexican border in the nearby Sonoyta vicinity affect the national monument in a number of ways. There the pumping of ground water reserves for Mexican agriculture, pesticides, non-native plants, unemployment and poverty, air pollution, and illegal aliens and drugs increase the problems of resource and visitor protection on the U.S. side. Cases of theft of property including vehicles, attacks on visitors, and vandalism have been experienced in the monument. Traffic patterns also affect the park experience: Mexico's Highway 2 parallels the border and the southern park boundary, lessening the feeling of isolation and quiet at places like Quitobaquito. Quitobaquito is within a designated wilderness area.



Development and Facilities

The monument is bisected by Highway 85 which crosses the border into Mexico at Lukeville. Two-thirds of the vehicles using this route are unrelated to park visitation. Most of these people probably don't realize they are, in fact, in a park. The entrance signing is low key; there is little development along the road associated with visitor services; the fee collecting is done after the turnoff to visitor center and campground.

The visitor center is Mission-66 era, with later addition of the theater. Public spaces share the building with the administrative offices of park headquarters. Both are cramped. Only the theater, seating 100 persons, is adequate. The kinds of functions and spaces that currently exist should be continued. In fact, the building is well-designed functionally; it just needs more space for offices, information/reception/sales, and exhibits. The landscaped native plants areas in front of the building and in the patio to the rear serve useful interpretive purposes as does the short loop nature trail which begins just outside the building.

Although adequate in the past, the building will feel increasingly cramped as time passes, especially during the winter season. The past growth rate of visitation at the monument must be considered when planning for future facility development; the number of visitors has about tripled in the past twenty years. So the reasons for recommending additional space in the future are to accommodate greater numbers of people as well as to increase interpretive offerings.

The primary method of experiencing the monument's resources is to drive one or both of the scenic unpaved oneway loop drives--21-mile Ajo Mountain Drive and 53-mile Puerto Blanco Drive. Other primitive roads require fourwheel drive vehicles for the most part and are infrequently traveled. Trails of various lengths are also available, two of which have interpretive devices. Over 70 interpretive signs exist in the field. Their condition and degree of accuracy varies.

Management and Planning

Management of the national monument has been faced with changing conditions over the years. Two important consumptive resource uses--mining and grazing--have been eliminated. Other challenges have arisen to take their places. As described on the previous page most of these emanate from outside sources, especially on the south side.

Major planning efforts are now underway to chart the course of the monument in the coming years and deal with the various issues and threats. A Resource Management Plan, a General Management Plan, and two Development Concept Plans (for the headquarters area and for Quitobaquito Spring) are in progress.

At this point a task directive for the GMP/DCPs has been written, a few parts of the plan prepared in draft form, graphics prepared to illustrate alternatives, and some decisions have been made. For example, the Regional Director has determined that a new visitor center will be constructed. Also, the preferred alternative has been selected for both Development Concept Plans. However, a first draft of the document has not been written yet and the time frame for completion of the project is not known.

Regional Cooperation/MAB

Plants, animals, geology, and climate do not recognize political boundaries; management and planning beyond park boundaries must be considered. While this is a responsibility for any managment staff, in the case of Organ Pipe Cactus NM, the biosphere reserve designation gives additional impetus.

Related resources are found on the reservation, the wildlife refuge, the Air Force range, BLM land, and in Mexico. The Sonoran Desert resources can be experienced throughout a large area. The Mexican Pinacate protected area showcases extraordinary volcanic features related to the geology in Organ Pipe Cactus. The Pinacate also shares a common cultural/historical heritage with what is now the monument in that both were part of the traditional homeland of the Sand Papago (Hia Ced O'odham). Interpretation of natural resources is also accomplished by the Saguaro National Monument, by the Arizona Sonora Desert Museum, the botanical garden in Phoenix, and others. In short, the resource experience, the management of land, and the interpretive media all have broader applications beyond the boundaries of a single entity.

INTERPRETIVE OBJECTIVES

Provide an interpretive program that is comprehensive in its scope of subject matter concerning park resources and their management.

Increase environmental awareness and appreciation of deserts. Focus on an ecosystem approach.

Maintain both in-park and outreach elements in the interpretive program.

Integrate the human and natural history stories to ensure that biosphere goals are achieved. Interpret cultural resources in the context of natural resources.

Provide adequate information to allow visitors to choose their desired park experience. Varying time budgets and seasonal differences must be accommodated.

Incorporate the results of the research program.

Promote programs which result in a larger area of cooperation around the monument.

Provide facilities and services appropriate to the visitation levels and patterns as well as to the interpretive material to be presented.

Ensure safe visits.

INTERPRETIVE THEMES

Lush and Diverse - The Sonoran Desert is the most lush and biologically diverse of all the North American deserts.

Desert Adaptation - Desert plants and animals have various adaptive strategies for survival and depend upon one another for survival.

Unique Assemblage of Species - Because of the monument's location and environment, it contains a unique assemblage of plants and animals, including some endemics and some species of plants and animals at their northern limits.

Desert Biogeography - Abiotic factors, including climate, latitude, altitude, slope, soils, water, and landforms, determine the locations of deserts and the plant and animal communities within them.

Geology - Organ Pipe Cactus NM illustrates regional Basin and Range physiography resulting from millions of years of geologic processes and the effects of climate.

Open Space - Open space, lack of development, clear sky, dry air, and lack of pollution allow a resource encounter that is increasingly rare in the modern world. At night these same conditions permit an outstanding sky viewing experience.

Water - The presence of water determines the morphology, distribution, relative abundance, and density of plants and animals; and also human living patterns, distributions, trails, and transportation routes.

Desert People and Lifestyles - Peoples from prehistoric to recent times have found similar and yet different ways of living with the desert.

Shaping the Land -- All people who have lived here have shaped the land in ways that met their needs. Simultaneously, the land shaped them.

Environmental Awareness - As integral parts of the world around them, individuals must become fully aware of their impacts upon the environment and conscientiously responsible for their actions. **Environmental Impact** - The lessons we learn about impacts on the land in Organ Pipe Cactus NM can be usefully applied elsewhere.

Global Biodiversity - National parks are not the whole solution to worldwide loss of biodiversity.

Man and the Biosphere - The natural resources know no political boundaries and need cooperative management, such as MAB, to coordinate three nations and many government agencies in effective management of the region.

Pristine Baseline - The national monument represents to the world a baseline or control plot, as a pristine and protected sample of Sonoran Desert.

Scientific Research - Research can further understanding of Sonoran Desert ecosystems and global ecology.

Species Protection - The national monument is active in the protection and survival of species--some that are endangered and unique to the monument.

(These themes were developed by staff members of the Organ Pipe Cactus National Monument.)



5.aguaro Cactus

This chapter describes all media recommended to interpret the themes selected, to accomplish all the objectives enumerated earlier in the prospectus. The scope of this effort is parkwide; it also extends beyond the boundaries. Costs are estimated for the interpretive media. Interim measures are included, in the event that implementation of the provisions of long-term plans is delayed for a length of time.

The appendix to this plan describes in detail the themes to be interpreted at locations throughout the monument.

Visitor Center

The visitor center is a place where most people come at some time during their visit--either as the first stop or later on. Some make multiple stops, to get more information or buy a book or take in a feature missed previously. Its purpose is to orient visitors, describe opportunities available in the monument and elsewhere, and introduce key interpretive themes. It should provoke interest, in the Tilden sense, with further depth on many subjects available in the publications format. The visitor center serves a variety of needs, different levels of interest, and is an indispensable part of the interpretive package. Over 90% of all visitors to Organ Pipe Cactus use the center.

Based on a decision made by the Regional Director, the GMP (when it is written) will call for a new visitor center building at Organ Pipe Cactus. The existing building will be renovated for administrative functions. In this way, administrative and public use functions will be separated to a greater extent than is now the case.

Accessibility of the new building and its interpretive media to special populations is an important goal. The subject is discussed in this chapter and also in the plan in a separate chapter on special populations. In a concept plan such as this it is not possible to be specific about each accommodation; at subsequent media planning and design stages more detail will be developed.

Functional Areas

The functional areas for public use and interpretive staff needed in the new building are:

--a larger lobby/reception/circulation area which contains an information desk and some information/orientation exhibits. These exhibits will include graphics to illustrate monument features and visitor activities to suggest what there is to do here: camping, hiking, exploring cultural history sites, birdwatching, viewing night skies, attending interpretive walks, and so on. Free leaflets and other publications will be available here on a variety of subjects including resource protection, safety, tips on trips. Other handouts will provide details on specific features. Interpretive talks and walks will be publicized.

--a larger sales area for publications and related material. Posters and silent previewing of videotapes should be accommodated. The area should be designed to allow adequate space for browsing visitors and seating for a few people. A sales/cash register desk separate from the information desk may be necessary, at least during the busiest part of the year. A stockroom, an office, and a good circulation path from loading dock to storage to display are required.

--a larger exhibit area, described in more detail in subsequent pages.

--a patio, out of the main stream of traffic but easy to find, for outside programs during clement weather, and for quiet breaks. Should be at least as large as the existing one.

--a multi-use theater with fixed seating and a sloped floor primarily used for scheduled daytime interpretive programs but also live presentations, and special events and groups. It must be accessible to all visitors. It should have the capacity to screen AV programs in various formats.

--accessible, climate-controlled public restrooms to serve larger numbers of people. They should be designed to have outside entrances so that interior lobby space is not used for circulation and so that restroom hours are not dependent on the hours of the visitor center (similar to the existing arrangement).

--short accessible interpretive trail near the visitor center, with good desert plant representation and no intrusions by roads. Its purpose is to introduce desert ecology and identify common Sonoran plant species. A few benches along the way may be useful. The disturbance wrought by construction of a new building may preclude a totally natural setting for the trail. In that case, landscaping of the desert garden type could be planted around the building and interpreted. Other alternatives, not mutually exclusive, are: revegetating the disturbed area, or locating this primary interpretive trail at a greater distance from the visitor center than the existing trail. Because it will be one of the most-used trails, wayside exhibits rather than printed folders are recommended to present the interpretive message.

--increased space for administrative functions including interpretive offices, workspace, slide files, equipment, etc. Some of the space may be located in the headquarters building instead of the visitor center.

Theater Programs

Two new audiovisual programs will be produced for screening in the theater. One will be a short orientation program, 6 to 10 minutes in length. It will introduce the monument, survey the natural and cultural resources in a holistic fashion, and convey the significance of the resources. It will briefly answer the question "Why is this area a national monument?" This is the program that everyone should see. It will be scheduled frequently for showings throughout the day--multiple times each hour all day in the peak season, perhaps on demand at slack periods.

The other new audiovisual presentation will be longer than the orientation program, 15 to 20 minutes, feature MAB kinds of issues, attempt to philosophically package man and the biosphere so that people see human ecology as part of the whole, not a separate subject. It will deal with species protection and biodiversity, importance of research, and the role of the park as a baseline. It should have a futureoriented component, environmentally and culturally. This program can offer a bit of variety and some depth for repeat visitors. It can be alternated on occasion with the orientation program, and can be used off-site, mailed out, and sold in video format.

Exhibits

Exhibits will be planned and produced for topics that lend themselves to this medium. The rule of thumb is that topics involving only words and pictures should usually be treated in publications. Exhibits can handle occasional topics of this nature but are most effective when they include relevant three-dimensional elements. Therefore, exhibits at this visitor center will include text, graphics, three-dimensional elements, some video components and will be accessible to special populations. They will be topical, rather than sequential, because that kind of organization best fits the random pattern of viewing adopted by most visitors.

In the exhibit area or perhaps the lobby/exhibit area interface, a topographic relief model will be placed to serve multiple purposes: trip planning, orientation, and interpretation of landforms and geology. The model should be touchable, if possible, and not stop at the border. It will be one of the most important hands-on devices.

Associated with this model in the general area will be a grouping of exhibits that begins with the common question asked by many visitors--where is the organ pipe cactus? The interest in this cactus will provide an opportunity to introduce other elements of desert biogeography. This exhibitry will help visitors understand that plants in the monument are organized into communities, learn where they can expect to see this cactus (geographically and topographically), and become acquainted with the distributionally-determining factors of slope, soil particle size, and relationship to soil moisture. These will be quicklycomprehended broad-brush treatments. Further depth will be found in personal services programs, publications, and waysides.

People should understand why the conditions are right at the monument to allow this cactus to flourish and that its habitat requirements restrict its distribution to certain places. Three-dimensional elements might include soil samples, rocks, habitat groupings, a model of an organ pipe cactus and/or cross-section, perhaps a "construct a habitat" device with movable cutouts. Parts of this exhibit should be touchable. If the monument's name is changed, the approach may change somewhat.

Another important concept to be introduced is deserts in general--their physical conditions, the global context, the classification of arid lands in the U.S. into four kinds of deserts. An AV element might survey each desert. Visitors will be assisted in their understanding of the characteristics of the Sonoran, as well as the other desert types.

In a land of water scarcity, in fact defined by it, water assumes an inordinate amount of importance. It is an interesting paradox that the scarcer it is, the larger it looms in importance, at least to humans who are liquid creatures, more than 50% water. Water is an element of many desertrelated topics including cultural history exhibits. In this region, prehistoric and historical travel was routed from waterhole to waterhole and campsites and homesites were near water. Not reaching a waterhole could have disastrous consequences. The scarcity of water is also key in desert ecology of plants and animals. Both cultural history and natural history have a water story. Sounds of running water, actual running or dripping water, perhaps a model of a tinaja with animals who depend on it--all of these could be included at appropriate points inside and outside the visitor center.

Additional exhibit topics will relate to other aspects of human history of the area. The purpose is to introduce the idea of human occupation, identify the people, suggest why they were here, and describe how they lived. It is especially important in a biosphere park to put human history in its proper perspective, in the context of the natural resources. Mural backgrounds, a map of settlement patterns, and other devices may be included. Artifacts that might be included are grinding stones, parts of a windmill, American Indian pottery and basketry, miners' tools, etc. There might also be some reproductions that could be handled by visitors. An audiovisual component is a possibility (on an aspect of the American Indian story, for example).

Finally, the concept of habitat will be treated in exhibits; this treatment might include such things as typical communities, some that elucidate desert adaptive strategies, particularly interesting relationships, or diversity. AV may have a place here, to depict the diversity of species and some adaptations to heat and lack of water. If the "construct a habitat" device is not used in the desert biogeography exhibit, it could be appropriate here, or perhaps in both places, increasing the interactivity of the whole museum.

A tentative list is provided here for purposes of summarizing the scope of AV elements which might be included in exhibits:

1. Desert weather - rain, thunderstorms, arroyos filled with rushing waters

2. Spring flowering

3. Plant/animal identifications

- 4. Adaptations, animal behavior
- 5. Humans in the desert, including American Indians
- 6. Survey of major U.S. desert types
- 7. Geological processes

This list will be further refined in later planning stages. At that time decisions will be made on open or closed captioning, handling of sound components, and provision of multiple languages. Topics were selected because of the need for motion or multiple images. They will be short pieces viewed by standing visitors and visitor-activated. Some degree of interactivity may be incorporated.

Coverage of these subjects in the exhibit area does not preclude featuring them in theater programs, in less depth.

Functional Relationships of Interpretive Spaces

in Organ Pipe Cactus NM Visitor Center



	<u>Existing Square Footage</u>	<u>Needed Square Footage</u>
Book sales	64	300 or more
Lobby	672	1050
Exhibits	755	1500
AV Theater	1288	1288
Public restrooms l	arger than existing ones	1200
Patio at least the	same size as existing one	
Interpretive offic workspace, storag (to be located in V HQ)	je	1500

<u>Science/Conference Center</u>

The proposed science center will be located nearby but in a separate building from the visitor center, perhaps in a campus setting which also includes the administrative facilities. On a self-guiding basis, a portion of the science center will be used by visitors--the lobby/reception area and the nursery. Access into scientific labs and administrative offices would be restricted.

1. The reception component would contain -

--A changeable exhibit which features current park research projects. Resource management concerns and questions might be included, along with information about what is being done--the NPS and cooperative studies/management at work.

--Permanent exhibits to explain the purpose of the MAB program. Exhibits would contain text and graphics, perhaps pieces of equipment. One or both of the exhibit subjects might lend themselves to video treatment.

2. The nursery would have a viewing area for visitors, so that they could see the extent of the facility without wandering freely through the plantings. On occasion an interpreter may lead a scheduled walk that permits closer inspection. Several panels would interpret the revegetation programs, methods of propagating desert plants, and the importance of gene pools in biological diversity.

3. A multipurpose room in the complex could be used not only for scientific and administrative purposes but also, for special educational groups, interpretive workshops, seminars, and for researchers to present project results.

Please consult the sections on Research, Man and the Biosphere, and Special Populations for related information.

<u>Trails</u>

Used by the majority of visitors, trails now provide opportunities for recreation, exercise, and for access to natural history and cultural history sites. In the future, the number of trails should be expanded in order to---offer access to all the park's plant communities --vary in length - short, moderate, and longer paths --vary in difficulty

--offer waysides for some shorter trails, trail guides for others, and some without any interpretive devices --provide the opportunity for solitude --give access to places that display evidence of geological

happenings

--give access to more remote cultural history sites --be maintained properly.

In this way different interest levels and time budgets can be accommodated as well as ensure that people who stay for longer periods of time can become well-acquainted with the monument. There is also the need for visitors who come in the summer heat to get a taste of the desert without incurring sunstroke.

The need for additional trails was confirmed by a recent survey of visitors.

One important trail mentioned earlier in the plan is a short accessible primary interpretive trail that introduces the desert. It would be most appropriate in the visitor center vicinity because it provides a basic introduction in the same way as other media at the building. If a natural-looking trail, free from visual and noise intrusion, cannot be provided at the new visitor center, then a landscaped "desert garden" will be interpreted at that location. No pretense would be made that it was a natural environment. Rather the garden would be represented as a special gathering of plants for interpretive purposes.

However, it is vital that somewhere in the monument, a short accessible trail traverse a natural desert environment, for use by all visitors but especially by people without much time, those who are in wheelchairs, passengers in large RVs or buses that are too big for the scenic drives, and those who don't wish to drive on an unpaved road for any reason.

As a starting point, below is a list of trails, existing and proposed, for Organ Pipe Cactus. It was prepared by the

park staff. Some trails will be interpretive, with folders or signs; others will simply offer visitor opportunities to experience the monument, see its scenery, and enjoy its solitude.

This listing should be further refined at later planning stages by a variety of disciplines to ensure that such factors as wilderness boundaries, highway safety, access to water holes by wildlife, adequate parking, protection of archeological resources, and accessibility recommendations are thoroughly explored.

EXISTING MAINTAINED TRAILS

TRAIL

PURPOSE

COMMENTS

1. Visitor Center Interpretive -Lengthen Nature Trail trail. Reduce introduce common Length .1 mile RT plants, visual and Sonoran Desert noise ecological intrusions relationships, if possible. and desert Function will adaptation theme be retained at central location. but location may change when new VC constructed. Wayside exhibits. Wheelchair accessible. 2. Desert View Trail Interpretive -Wayside Length 1 mile RT explain ethnoexhibits. botany of Not wheel-Sonoran plants as chair part of Desert accessible. People and Lifestyles theme 3. Victoria Mine Interpretive -Wayside Trail Explain gold/silver exhibits at Length 4.5 mi. RT mining, geology & trailhead history of Victoria and mine. mine. Not wheelchair accessible.



4. Campground Perimeter Trail Length 1 mi. RT	Dog walking, good after dinner stretch	Make wheelchair accessible. Trailhead signs. No interp. devices.
5. Palo Verde Trail Length 1.3 mi one- way	Dog walking, safe route from visitor center to campground for walkers.	Trailhead signs. Not wheelchair accessible. No interp. devices.
6. Estes Canyon/ Bull Pasture Trail Length 4.1 mi RT	Nice hike, scenic views of Ajo Mtns. Higher elevation plants. Strenuous. Interpret history, role of water, unique species, baseline.	Develop interp. folder that hikers can carry. Trailhead wayside. Not wheelchair accessible.

EXISTING UNMAINTAINED PRIMITIVE TRAILS

A variety of primitive unmaintained trails are currently available to visitors and offer a transition between the developed, maintained trails and crosscountry hiking. The park staff recommends that existing primitive trails remain, but some form of modest signing (not wayside exhibits) is needed to mark their beginnings. These routes fulfill some of the suggestions of what trails should do, i.e. offer opportunities for solitude, access to remote cultural sites, etc.

PROPOSED NEW MAINTAINED TRAILS

TRAIL

PURPOSE

COMMENTS

1. South Alamo Canyon Access to higher Nature Trail. elevations. **Proposed** length Interpret lush and 4 mi. RT (in and diverse, unique species, water, and out of canyon). biogeography themes, Parking at Alamo illustrate with Campground. difference in plant communities. Contrast canyon environments with

Not wheelchair accessible. Trail, trailhead wayside, and folder need to be developed.

open desert.

2. Senita Basin Loop Trail. Proposed length 3 mi. RT Parking: Senita Basin picnic area.	Provide access to unusual plant species. Interpret desert biogeography, explaining how granite soil and temperature influence plant communities. Interpret unique species, geology, desert adaptations, species protection themes.	Use existing primitive routes to develop trail. Make wheelchair accessible if feasible. Develop folder and trailhead wayside.
3. Quitobaquito Trail Proposed length approx. 2 mi. RT inc. access trail from parking lot. Parking: new lot to be created.	Provides access to spring and pond. Interpret water, land shaping, unique species, species protection, global biodiversity, and environmental impact themes.	Decide on one trail route, develop trail. Abolish all other paths. Not wheelchair accessible. Develop interp. folder. Install trailhead wayside.
4. Bonita Well Trail Proposed length approx2 mi. RT Parking: at site.	Access to rancher's line camp. Interpret land shaping, impacts, and water themes as they relate to ranching. Also desert people and lifestyles in life of a cowboy in Sonoran Desert.	Develop trail. Make wheelchair accessible. Develop new folder.
5. Grinding Holes Trail Proposed length approx2 mi. RT. Parking: Hwy. 85 at milepost 70-71.	Offers opportunity to see bedrock mortars. Interpret people and lifestyles of Indian cultures, land shaping, and desert adaptation themes.	Develop trail to grinding holes. Make wheelchair accessible, if possible. Develop waysides.

6. Desert Garden Loop Give travelers a Develop trail. Trail Make wheelchair stretch and an approx. .25 mi RT opportunity to walk accessible if loop. Parking Hwy. in desert. Interpret possible. Develop waysides. 85 at milepost 73-74. lush and diverse, pristine baseline themes with ID of

Offers quiet hiking

through low desert

mtns. and oppor-

backcountry mine

sites. Backpacking.

Offers great views of

strenuous. Backpacking.

tunities to see

Not strenuous.

Ajo Mts. Mildly

- 7. Ajo Valley Overlook development on Hwy. 85. Trail Proposed length .1 Interpret lush and diverse to .3 mi. RT theme, introduce Sonoran New pullout at MP Desert. 66 on Hwy. 85
- 8. Puerto Blanco Loop Proposed length 6-9 miles RT Parking at stop 4 on Puerto Blanco Drive.
- 9. Loop Trail in Zone 170 near Diaz Spire. Proposed length 6 mi RT. Parking on Ajo Mt. Drive.
- **10.Twin Peaks Trail** Proposed length 3.5 mi. RT. Parking at campground.

A challenging hike to top of Twin Peaks, fulfilling a trail need requested by park visitors.

Social paths exist, reflecting many years of this destination's popularity for people in campground. Develop safe and easy to maintain trail to top, and trailhead sign.

11. Sonoran Desert Trail **Proposed** length approx. .2 mi. RT. New pullout at north entrance on Hwy. 85.

Introduce this desert at north entrance. Interpret themes of desert adaptation and environmental awareness.

Develop accessible trail and waysides.

of some existing primitive routes, plus some new Trailhead sign.

Wheelchair

accessible if

Develop trail and

Use combination

possible.

waysides.

Develop new trail and trailhead sign.

trail development.

common species. Increase interp.

TRAIL SUMMARY - Organ Pipe Cactus NM

<u>Ma</u>	intained Trails	<u>Length</u>	<u>Status</u>	<u>Wheelchair</u>	Interpretive devices
1.	VC nature trail	.1 mi RT	existing	yes	yes - waysides
2.	Desert View	1 mi RT	existing	no	yes - waysides
3.	Victoria Mine	4.5 mi RT	existing	no	yes - waysides
4. 5.	Campground Perimeter Palo Verde Trail	1 mi RT 1.3 mi	existing existing	should be no	no no
6.	Estes Canyon/ Bull Pasture	4.1 mi RT	existing	no	yes - folder & wayside
7.	S. Alamo Canyon	4 mi RT	proposed	no	yes - folder & wayside
8.	Senita Basin Loop	3 mi RT	proposed	should be	yes - folder & wayside
9.	Quitobaquito	2 mi RT	proposed	no	yes - folder & wayside
10.	Bonita Well	.2 mi RT	proposed	should be	yes - folder
11.	Grinding Holes	.2 mi RT	proposed	should be	yes - waysides
12.	Desert Garden	.25 mi RT	proposed	should be	yes - waysides
13.	Ajo Valley Overlook	.13 mi RT	proposed	should be	yes-waysides
14.	Puerto Blanco Loop	6-9 mi RT	proposed	no	no
15.	Zone 170/Diaz	6 mi RT	proposed	no	no
Maintained Trails	<u>Length</u>	<u>Status</u>	Wheelchair	Interpretive devices	
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16. Twin Peaks	3.5 mi RT	proposed	no	no	
17. Sonoran Desert Trail	.2 mi RT	proposed	yes	yes-waysides	

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organ pipe cactus

Scenic Drives

A majority of visitors use the two scenic drives as a way of getting acquainted with the monument's resources. Interpretation is provided by a sprinkling of wayside exhibits and a self-guiding booklet for each drive. Along the way are numbered posts which correspond to portions of text in the booklets. The guides are nicely illustrated, well-written, one color, and inexpensively priced. They are distributed by the honor system on the drive.

In the future, the guidebook/numbered post system will be retained as the primary method of interpretation. This system allows after-hours use and functions well because visitors are not required to come to the visitor center to obtain the folders. The existing posts should be replaced by more durable posts, of metal, painted and treated to the same standard as NPS wayside mounting hardware, to be unobtrusive and maintenance-free.

A tape-recorded version of the guidebooks could be made available for sale to visually-impaired people, as well as the visitors who find it more convenient to listen than to read while driving the road. Foreign language tapes might be considered.

An upgraded booklet could be developed with full-color illustrations and more sophisticated design, which would sell for a higher price than the field-distributed guides. It might be similar to the road guide prepared several years ago for Petrified Forest. Distribution of the new booklet would be restricted to the visitor center. This would offer more of a choice to visitors and combine the interpretive function with the souvenir function for a popular activity while retaining the lower cost field-distributed guides. There is probably a demand for both. They would occupy different niches in the sales program.

A few wayside exhibits will still be placed along the drives in the future--at trailheads and at some other sites, primarily ones associated with cultural history. Additional cultural history information might be incorporated in the guide booklets.



Other Sites

A number of other sites in the monument are discussed here to evaluate their interpretive implications and specify media/facility development.

Quitobaquito Spring

One of the rare wet spots in the desert, Quitobaquito attracts all sorts of birds and other wildlife. An endangered sub-species of pupfish is found here. Likewise, the spring has served as a crucial water source from prehistoric to present for humans engaged in travel and trade, settlement and habitation, exploration and migration, and irrigation and agriculture. Some of these activities resulted in construction of buildings but none exist today on the site.

What remains, instead, is a cultural landscape which has experienced a continuum of human occupation displaying intriguingly diverse adaptations to the desert by a succession of cultures, according to the National Register nomination. The flow from the spring has been dammed to create a permanent reservoir/pond. Structures inhabited during this century were removed by the NPS. The existing "development" for visitor use lacks a coherent design and is not up to standard: informal paths lace the area; the parking lot and approach to the spring have an improvised appearance. Vandalism of picnic tables and signing has occurred, and thefts of visitors' property is a real problem.

In the future, at a minimum, wayside exhibit signing should interpret Quitobaquito. No hardware would be placed at the spring; a trailhead wayside at the parking lot would be sufficient. A free/sales folder distributed at the visitor center/on-site would provide basic interpretation and include a good graphic of the area. Various aspects of the story of the spring and pond would also be interpreted in the visitor center media, other publications, and in personal services.

The Development Concept Plan's preferred alternative proposes relocation of parking, with a .7 mile unpaved trail which proceeds to the pond, following the approximate route of the old salt trail.

Milton Mine

The physical remains include a scarred hillside and some wood structures associated with loading of copper ore. Malachite and azurite are scattered about the ground surface. This is the mining site that exhibits the most environmental damage of any in the monument. A primitive trail in Senita Basin leads to the site, not much used by park visitors.

This should remain as a discovery site, without formal interpretive devices. Visuals of the mine site would be useful in publications, audiovisual programs, and exhibits to illustrate (1) mining in the national monument, (2) environmental impact of this activity, (3) mineralization and gold/silver/copper geologic story.

Dos Lomitas Ranch

Physical remains include an adobe ranch house with a ramada, one outbuilding and the ruins of two others, and a collapsed windmill. This was the headquarters for the large ranching operation of the Gray family. Dos Lomitas is the most architecturally interesting historic site--an example of the frontier style known as the Sonoran tradition.

It would be a good primary site for interpretation of the ranching story. The property contains buildings and structures that are characteristic of the frontier cattle-raising pattern that developed and expanded in this international border area during the early and middle decades of the twentieth century. The period of significance for the property is 1914 to 1941. Interpretation of the ranching story should include the context of this site--the extent of ranching, the impact, the characterisitics--followed by specific site information.

However, if the road is not improved to permit year-round passenger vehicle traffic, alternative sites for ranching interpretation should be considered.

Removal of building materials in the past by Mexican nationals threatens the integrity of the site. Therefore, it is important to explain to south-of-the-border visitors that this is one of the monument's historic sites and protected by law.

Wayside exhibits in Spanish and English currently interpret Dos Lomitas and should eventually be replaced if the road is improved. Ranching can also be interpreted by visuals in publications, exhibits, audiovisual programs, and in personal services programs. In the past special tours have been scheduled to this site. The site has also been known as Gray Ranch and Blankenship Ranch in the past (for previous owners) and some historic research reports use names other than Dos Lomitas.

Gachado Well and Line Camp

Physical remains include an adobe line shack, a corral, and windmill. It is one of the best examples of a line camp in the monument. Not many visitors go there but more than to Dos Lomitas because the unpaved road is still passable at this point to two-wheel drive vehicles. Development of Gachado as an important interpretive site will be dependent on maintaining the access road. Located close to the Mexican border, Gachado has had protection problems.

Bilingual waysides currently interpret history and resource protection problems. They should eventually be replaced by new waysides, if visitation increases.

North entrance of monument

The north entrance of the monument, 17 miles from the visitor center, is now marked only by entrance signing. The GMP will be determining the level of development appropriate here--whether fee collection will be relocated to the entrance, if restrooms and staff are required in the area.

A higher interpretive profile would be desirable. A pulloff on the highway associated with a nice desert view could be developed. It would contain multiple wayside exhibit panels interpreting the view and providing park orientation somewhere near the north boundary. Addition of a short trail might be considered here if it appears visitors will want to stop so close to the entrance. For visitors to invest time in interpretive experiences of any depth they typically must feel a sense of arrival. That feeling might not have developed immediately at the boundary of the monument. This trail is described in the trails section of the plan under the name of Sonoran Desert Trail.

The purpose of the interpretation here would be to welcome visitors, orient them with a map, introduce the idea that they are in the Sonoran Desert, and let them know that certain regulations are in force to protect the park. More changeable information could be placed near the fee collection point, if implemented: current camping availability, road conditions, etc.

Highway 85

Proceeding southward from the north entrance, Highway 85 could have several low-key developments such as pull-offs, overlooks, and short trails that would rescue the north part of the monument from being merely a drive-through experience. These are described in the trails section of the plan under the names of Grinding Holes, Desert Garden, Ajo Valley Overlook.

One important visitor service to provide is an explanation, at the most basic level, of desert plant communities and explain why the organ pipe cactus is not found in every community. It is a source of confusion to visitors that the cactus for which the monument is named is not very prevalent at the north end of the park.

This development is dependent on eliminating commercial traffic and slowing of vehicle speeds, for safety reasons.

Also appropriate to consider is a traveler's information system which transmits short messages to the car radios of visitors.

South Entrance

If fee collection takes place on Highway 85 in the future, an entrance station with restrooms at the south entrance may also be necessary. Orientation waysides should be considered for the vicinity, if an appropriate spot for a pulloff is found. At a minimum, the park folder could be dispensed at the station.

If non-park traffic is re-routed through the reservation and Highway 85 becomes more exclusively a park road, it is expected that first entries to the monument will increase on the south end.

Bates Well and Ranch

Physical remains include a wooden house, corrals, windmills, wells, and outbuildings. Bates was a line camp for the ranching operation in the monument. The site is on a primitive road and not much visited by the public. Because of past vandalism problems, volunteer custodians were recruited to live there for protection purposes.

Small waysides currently interpret ranching history on the site. These can continue to be used in the future. This is primarily a discovery site, not needing additional interpretive devices.

Growler Mine

All physical remains of the copper mine were removed by the NPS in the 1950s.

There is no visitor use. No interpretive media are needed.

Golden Bell Mine

Vertical mine shafts here are covered by grates for visitor protection. A vein of quartz is nearby. The site is an interpretive stop on the Puerto Blanco scenic drive now and receives considerable visitor use.

A wayside exhibit interpreting geology and hard rock mining would be appropriate.

Bonita Well

This is a nice small site which demonstrates, in an accessible location, the nature and purpose of a line camp in ranching operations. It has a cabin, corral, and well. Located on the Puerto Blanco scenic drive, it receives considerable visitor use and is currently interpreted in the self-guiding booklet for the drive.

A separate folder could be provided for a new short accessible trail if this becomes the main site for ranching interpretation (if the road to Dos Lomitas is not improved). Ranching can be interpreted to some extent here regardless of what happens at Dos Lomitas because Bonita Well's location means that it will be used by many people. Pozo Nuevo

Another line camp, the site includes a well, windmill, and corral. It is located on a primitive road and is not much visited by the public.

No interpretive media are needed.

Campground

The campground near the visitor center offers an amphitheater for evening programs, seating 350 persons. It is in need of major rehabilitation.

Several interpretive and hiking trails in the area are extensively used by visitors: Palo Verde, Campground Perimeter, Desert View, and Victoria Mine. They are already discussed in the trails section of the plan. One new trail is also proposed: Twin Peaks.

A ramada currently shelters several bulletin boards which are used for orientation, and campground and safety information. This facility needs to be upgraded and made accessible to all visitors.

Parkwide Wayside Exhibits

Wayside exhibits will be used at various outdoor locations throughout the monument to provide information, orientation, and to interpret specific features. For the most part these wayside exhibits will be restricted to the front country associated with roads or other development where they can be used by substantial numbers of people. The panels will have a family resemblance, contain text and illustrations, will be weather and vandal resistant, and easily replaced. Some will be vertical, high-profile devices in a kiosk; others will be oblique-mounted, lower profile panels. Bulletin boards and smaller plant identification-type signs will also be part of the wayside system. All will have site preparation requirements.

Already in place are a series of waysides of various styles and materials. Subject matter treated by these panels includes plants and animals, geology, and cultural history. In addition, printed folders have been prepared to interpret the resources along some roads and trails. All existing waysides will be evaluated for conversion to a standard format when the time comes to implement a new parkwide system. Some may be retained; most will be replaced.

I ocation

New waysides recommended:

Subject

	Subject	Location
1 - 10	The Sonoran Desert, plant i.d., ecology, adaptive strategies, relationships	Interpretive trail/ landscaped grounds of VC
11 - 13	Nursery purposes and methods	Science Center
14 - 16	Park orientation, desert introduction, regulations	North entrance/ Highway 85
17 - 19	Park orientation, desert introduction, regulations	South entrance/ Highway 85
20	Orientation to drive	Beginning of Ajo Mountain Drive

21	Orientation/safety info. Historical interp.	Bull Pasture/ Estes Canyon Trailhead
22 - 23	Orientation to drive	Beginning of Puerto Blanco Drive, north and south ends
24	Hard rock mining/ geology	Golden Bell Mine
25	Orientation/safety info. Interpretation	Quitobaquito Spring parking lot - trailhead
26	Orientation/safety info. Interpretation	Senita Basin Loop Trail trailhead
27 - 36	Trailhead and theme interpretation	Desert View Trail
37 - 38	Archeology	Grinding Holes Trail
39 - 41	Plants, desert lushness, pristine desert interp.	Desert Garden Trail
42	Orientation/safety Interpretation	S. Alamo Canyon Trail - trailhead
43	Orientation/safety Interpretation	Victoria Mine Trail - trailhead
44	Geology, mining	Victoria Mine Trail - mine site
45 - 47	Ranching	Dos Lomitas Ranch and Gachado Line Camp

48	Orientation	Ajo Valley Overlook, Hwy. 85 pullout at MP 66
49	O'odham landmarks	Montezuma's Head pullout, Hwy. 85
50 - 53	Bulletin boards Orientation, safety	Campground

Although not included in the above list, a number of small plant identification signs will be used at various places. A preliminary estimate of the scope of such signage would be a total of 60 to 80 at four or five locations.

It is also worthwhile to point out that a distinction is made in this plan between trailhead wayside exhibits and trailhead signs; the former being produced as an interpretive panel, the latter as a simple sign, through the normal park sign program. The determination of which trails fall into each category is a matter of judgment and funding. The total wayside package size can be decreased or increased by changing the trails in each category.

Other signage will be needed that will not be part of the wayside system, safety/hazard warnings at dangerous places for example. It would be helpful to have the Interpretive Division represented on the sign committee in order to provide input on these needs.

Because this is a large and expensive package of waysides, at some point the park staff will need to prioritize so that pieces of the package could be funded over a period of time, as money became available. Although desirable, it is unlikely that all of the monument's waysides could be funded at the same time.

Man and the Biosphere Program (MAB)

According to various authors who have described the program: biosphere reserves are established for the preservation and study of representative ecological areas; the relatively unimpaired condition of these areas can help us gauge the effects of modern activities on other ecosystems; they are both site and subject of education programs, and they are repositories of a diverse array of the planet's genetic heritage.

The biosphere concept was designed to include a system of zones in which a core area of undisturbed ecological relationships is adjoined by buffer and cooperation zones. The idea is that these are complementary zones, designed to demonstrate sustainable development and a harmonious relationship of humans with their environment. Applying this concept in the developed world and the developing world is challenging, to say the least. But it is very clear that humans must find a better way of relating to the environment. Whether it will happen in time is the question. Loss of biological diversity and the ominous prediction of the world population doubling or tripling in a relatively short time adds impetus to efforts such as MAB.

The Organ Pipe Cactus Biosphere Reserve, as it currently exists, or enlarged to include part of northern Mexico, does not bear the whole burden of saving the world. Nor does the National Park Service. But it can do something. The MAB designation strengthens the need for the in-park interpretive program. It also provides a strong justification for interpretive efforts beyond the boundaries.

One of the most felicitous results of the designation is the encouragement it gives to park management to carry on regional planning and interpretation and to cooperate with neighbors in a variety of ways; it makes park boundaries a place to look outward from, not inward. It is a breath of fresh air, of hope, and it will take ingenuity and energy to implement.

While the MAB program at Organ Pipe Cactus will be outlined in more detail in the GMP, here are some interpretive actions that spring from and are inspired by the biosphere mandate:

1. Cooperate with reservation, state, U.S. Customs, and Mexican officials to rethink the regional transportation network, and points of entry to Mexico. If increasing agricultural activities in Mexico result in the need for a 24-hour port of entry and related quarantine area, adverse impacts by increased commercial traffic will be felt in the national monument. One development option being considered is rerouting Hwy. 85 to the adjacent reservation to move non-park-related traffic out of the monument. The monument could then "take back its road," which would become more of a sightseeing and interpretive experience. Modestly increased park development would then be undertaken: pulloffs and wayside exhibit signing, perhaps short trails to scenic overlooks. There would be less emphasis on the visitor center area as "the park", something that seems to happen in part because of the present location of the fee-collection station and also because there is nothing along Hwy. 85 to make visitors feel that they are inside a park. The long drive south after entering the monument would become a visit rather than merely transit time enroute.

Economic benefits from the road rerouting may accrue to the reservation. A cultural center with a sales component could be developed in conjunction with the new route. The tribe could interpret their own cultural history and develop expertise in disciplines related to this effort. Visitors to the monument could be referred to the facility for additional information on American Indian themes. Cooperative special events might be planned. The very successful O'odham Day first observed at the monument in spring of 1991 is a good beginning.

Interpretation and preservation facilities and activities on the reservation could be accompanied by other visitor services.

2. Interpretive partnerships/outreach program.

The purpose of these partnerships and the outreach program is to extend the park's interpretive message to a larger audience, without large increases in staffing. Other entities in the region offer an opportunity to join forces for mutual benefit. Improved environmental awareness of deserts is a subject that is needed by the urban populations, people who do not make up a high percentage of park visitors. If they don't come to the message, the message should be taken to them. Joint efforts make the most of scarce funding and staffing resources. They demonstrate the efficacy of regional cooperation. It is also an opportunity for the ORPI staff who live in a rather isolated situation to become better acquainted with the programs and efforts of others (and vice versa). It will be a learning opportunity for the public and for the professional staffs of all the organizations involved.

Audiences for outreach efforts are Mexican school children in Sonoyta, American school children in the region, American Indian school children on the Tohono O'odham Reservation, and the desert dwelling populations of the American Southwest, especially in Tucson and Phoenix. Printed material, audiovisual programs, and traveling exhibits will be primary. Partners in the program will be crucial: universities, school teachers, other parks, federal and state agencies, and other education institutions such as the Arizona-Sonora Desert Museum, the Boyce Thompson Southwestern Arboretum in Superior, and the Desert Botanical Garden in Phoenix. Newspaper and magazine writers will be involved too.

3. **Park-based research and interpretive activities.** Described elsewhere in the plan.

4. Review MAB Program-produced materials for possible use at Organ Pipe Cactus.

Underway now is a series of 16 documentaries on the world's biomes. The focus is the co-evolution of man and environment. The program dealing with hot deserts is scheduled for completion by the end of 1993. Following this series, a large format "coffee-table" book will be produced, then an interactive video.

5. Evaluate the impact of biosphere designation on park visitation.

Does it have implications for the kinds of interpretive material provided? Are more scientifically-minded people visiting? Is interpretive media coverage adequate for issues such as biological diversity? Do lay visitors understand the implications of biosphere designation?

6. Investigate funding that might be available through the MAB Program for interpretive services and media.



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Ocotillo

LIST OF PRODUCTS AND COST ESTIMATES

	<u>Plan</u>	Produce	AV Equipment
Visitor Center			
Orientation devices and decor in lobby/ reception area. Exhibits, models, etc. in exhibit room	\$120,000	\$600,000	
Conservation of objects used in exhibits		\$30,000	
Audiovisual			
programs: Video shorts as part of exhibits;	\$15,000	\$100,000	\$40,000
Orientation S/S program (theater) 6-10 minutes;	\$10,000	\$60,000	\$72,000*
Man and the Sonoran Desert video projection (theater) 15-20 minutes.	\$15,000	\$100,000	\$100,000
Science Center			
Exhibits in reception area	\$25,000	\$125,000	
Video program in reception area	\$10,000	\$40,000	\$20,000
Parkwide Waysides			
53 panels and bulletin boards; 60-80 plant ID labels	\$60,000	\$360,000	



These amounts are Harpers Ferry Center Class C project cost estimates. They are not to be used to formulate budget requests. The Harpers Ferry Center Programs Office, phone number 304-535-6258, should be contacted for Package Estimating Detail (Form 10-802) which will list the current cost estimates for each project type and include contingencies and overhead appropriate for fund source.

*this estimate includes all new AV equipment in a standard booth installation (16mm non-automatic film, sound/slide, speakers, etc.)

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Publications and related items are an important part of the interpretive program. They provide a wide variety of educational material, from free items to sales items ranging in price from \$0.50 to \$40. Here is the medium for offering information in depth, self-selected by the visitors to match their wallets and interests.

Free printed material includes the park folder, converted to full-color unigrid format, and one-page bulletins on such topics as weather, safety, wildflowers, horse use, and so on. These bulletins are all one format, have been recently converted to large type for easy reading, and cover some 20 to 25 topics. A separate series, Natural History Notes, focuses on plants and animals.

The cooperating association, Southwest Parks and Monuments Association, offers a moderate selection of material that is attractive in appearance and reasonably priced. About seventy items can be purchased in formats such as books, videotapes, postcards, slides, notecards, maps, posters, booklets, and checklists. Subject matter ranges widely: regional travel and attractions, desert flora and fauna, geology, ecology, large format photo books, field guides of various kinds, astronomy, trail and scenic drive booklets, as well as feature-related material on Mexico.

Gross sales for this association outlet for fiscal year 1991 was \$111,627. Best selling items include a paperback on the Sonoran Desert, the topo map, postcard packet, and various natural history guides. One sales outlet is operated at the monument, in the visitor center.

Existing publications that have been developed specifically for Organ Pipe Cactus include:

--a bird checklist

- --a checklist of mammals and reptiles
- --annotated bird checklist

--topographic/hikers map

--Ajo Mt. Drive self-guided booklet

--Puerto Blanco Drive self-guided booklet

--visitor center nature trail booklet

--vascular plant checklist

All of these were produced by the Southwest Parks and Monuments Association, except the topographic map.



In addition to producing interpretive items for sales, the association has contributed some of its profits to be used in support of the interpretive program. This money has funded, among other things, a replacement for the monument's orientation audiovisual program.

At the top of the monument's wish list for the future are production of a geological publication and a general, reasonably priced, full color interpretive book on the monument. Both of these items could have a broader focus, including areas and related features beyond the boundary. Mountain systems and volcanic activity are no respecters of boundaries, so the Pinacate would be a logical inclusion in the geology publication. The interpretive book could contain a section on biosphere reserves, perhaps to the extent of identifying other reserves.

New publications that would be needed for the new interpretive trails recommended in this plan are:

1. South Alamo Canyon nature trail folder

- 2. Quitobaquito Spring trail folder
- 3. Bonita Well trail folder

4. Bull Pasture/Estes Canyon trail folder

5. Senita Basin loop trail folder

Other sales items that could be considered are: --additional videotapes, perhaps a copy of the MAB film proposed for the visitor center theater;

--an educational packet for schools that combines a handbook or other publication with a videotape and lesson plans;

--layman's versions of research project results, perhaps a compilation of a number of projects;

--a cut or uncut version of the documentary program being produced on hot deserts as part of a series for the Man and Biosphere Program;

--material cooperatively produced with the Tohono O'odham tribe;

--a folder on discovery sites/a guide to backcountry hiking and backpacking in Organ Pipe Cactus;

--a publication on human history of the monument and surrounding region (in the context of natural history); --a low-cost audio cassette tape version of the booklets for the two scenic drives;

--field guide to Sonoran Desert plants, not specific to Organ Pipe Cactus and suitable for sale at other outlets (nearing completion). The cooperating association may also wish to volunteer its assistance if the O'odham tribe sets up a cultural/interpretive center on their own land that contains a sales outlet. The association could provide advice on merchandising and display.

As a final suggestion for the future, the association outlet should look toward expanding its selection of sales material to include more desert-specific items. Production of the previously-described items will help. Partly because of the confusion of deserts with wastelands and the consequent limiting of the number of afficionadoes, the supply of literature and other related material for deserts is generally smaller than for other types of ecosystems. This indicates a real educational need partly to be satisfied by publications, along with other media.

A larger selection of material and more visitors to the monument in the future will mean more space will be needed for the sales function.

RESEARCH AND COLLECTIONS

Organ Pipe Cactus has been the subject of a great deal of scientific research in the last ten years. Research, along with education, is one of the important elements in the MAB Program and is, in part, responsible for the active program. Some 50 projects underway now are producing information on such subjects as pupfish population trends, geohydrologic conditions and water chemistry at Quitobaquito Spring, ocotillo flower use by migratory songbirds, atmospheric deposition, plant utilization and reproductive biology of the leaf cutting ants, senita growth, rare plants, alluvial fans, pronghorns, and a host of others. A major research effort-the Sensitive Ecosystems Program which began in 1987--was designed to assess ecosystem conditions in the monument by gathering baseline data. It emphasized the biosphere reserve status of the monument and looked closely at impacts from Mexican agriculture among other things. Resource monitoring protocols set up by this research are continuing.

Prior to 1989 some 250 prehistoric, historic, and ethnographic sites had been identified. In 1989 an intensive archeological survey began; it continued for several years. Many additional sites have been located in the recent surveys, including villages, canals, and prehistoric trails. New material was added to the monument's collections from this study.

Currently a park residence is being adaptively used for resource management offices and support of on-site research. In association with the building is a small native plant nursery. The plants are used for areas needing revegetation. When the new science center is constructed it will provide better physical conditions for these functions and will allow visitor access to at least part of the building so that the role of basic information in good management is emphasized. The existence of the facility alone will make the point; interpretive media will assist, as described in the plan section of this document.

In the future, it would be useful to have an interpretive component built into all government-funded research. At the minimum, this would consist of a one-page information sheet written by researchers which would summarize the purpose and significant findings and could be incorporated into the Natural History Notes series. This component might also set aside a few research dollars to help fund efforts to incorporate research findings into interpretive media.

Some of the research now being conducted and studies done in the past have resulted in collections of material. In the future, the new science center will house certain collections. Other materials will be kept at the research institutions involved and at places such as the Western Archeological and Conservation Center in Tucson. The Scope of Collections Statement provides detail on the nature and location of material. Some of it may have potential for use in exhibits.

An herbarium collection is located at the monument and at the University of Arizona. Other park collections include specimens of rocks, mammals, birds, reptiles and amphibians, and terrestrial invertebrates. Items related to the park's administrative history are available. There is a collection of original lithographs made by Arthur Schott during the 1850s U.S.- Mexico boundary survey. Archeology collections include such items as stone tools, pottery, shell jewelry, projectile points, and sherds. They are associated with American Indian groups from Archaic to historic periods. Artifacts from historic sites have also been collected.

In view of the extensive programs of research underway, no additional projects are proposed here to support interpretation. The Scope of Collections Statement recommends, and we concur, that collections stored outside of NPS repositories be surveyed and adequate documentation be prepared to describe scope and condition of the collected items.



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Choela Cactus

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SPECIAL POPULATIONS

Provisions will be made to accommodate the needs of special populations who visit the site. Special populations are identified as those with sight, hearing, mental, and mobility impairments; visitors who do not speak English; and the elderly and young children.

Accommodations will be made for access to the site as well as to most of the interpretive media. Guidelines are available to assist park staff and media designers in increasing their sensitivity to the special needs of these groups. A number of such accommodations will benefit all visitors.

Some specific suggestions are listed here; others will be developed during later operational and design stages and will reflect the state of the art and standard procedures at the time of implementation.

Physically Impaired:

Recent refiguring of the number of disabled visitors indicates that a larger number of people with disabilities visit the monument than previously thought. Probably no more than 2% of total visitation are severely disabled people, i.e. in a wheelchair, totally deaf or completely blind. However, more than 80% of visitors are over 55 years of age and have some loss of hearing and sight.

The visitor center and campground have undergone modifications to accommodate the physically disabled but still don't meet UFAS standards. A new visitor center desk was installed in October of 1987 which better serves these visitors.

A paved trail from the campground to the amphitheater can be used by visitors in wheelchairs. "Parking spaces" between the benches at the amphitheater accommodate wheelchairs. Fully accessible toilets were installed at the Estes Canyon picnic area, Bonita Well, and Alamo Canyon primitive campground in 1989. Currently there is only one fully accessible nature trail, located at the visitor center. It is used by visitors in wheelchairs and provides an easy walking surface for visitors with other mobility impairments.



Reformatting of interpretive handouts and trail guides into larger size type has helped visitors with vision impairments.

Two AV programs in the visitor center have been developed for the hearing impaired: for "Springtime", volume controls on the audio phones have been installed; and a new slide program was developed and installed in FY86, called "A Slice of the Sonoran" which is captioned for visitors who are deaf.

An accessibility study is underway by the staff, utilizing local accessibility groups to evaluate facilities and make recommendations.

For the future, various pieces of legislation provide guidance. Public Law 90-480, the Architectural Barriers Act, and the 1990 Americans with Disabilities Act establish certain standards for physical access. Any new buildings constructed will, as a matter of course, be designed for accessibility for the physically disabled, both by visitors and employees.

Not all trails will be accessible to visitors in wheelchairs but more are needed than currently exist. In the chapter on trails, six are recommended to be wheelchair accessible:

- 1. Visitor Center Nature Trail
- 2. Bonita Well Trail
- 3. Grinding Holes Trail
- 4. Desert Garden Trail
- 5. Campground Perimeter Trail
- 6. Senita Basin Loop Trail

All trail guides and handouts developed in the future should also have larger size type for easy reading.

Wayside exhibits along trails will be designed with the needs of all visitors in mind. Type size, contrast, audio devices, angle and height of mounting are important considerations.

For the near future, within the existing floor plan of the current building, there are plans in progress for new interpretive devices with programmatic accesssibility: --a new table-top relief map, fully touchable; --a new audiovisual program in the theater with audio description, captions, and a listening device.

In the more distant future, access to new interpretive media in the new visitor center and in the science center will be handled in a number of ways. All video programs with narration will be closed-captioned for hearing impaired visitors. Theater audiovisual programs will be equipped with a caption board, listening device, and audio description if appropriate and feasible. Consideration should be given to tape recording of the park folder for the benefit of those who are visually impaired. The text of waysides on the primary interpretive trail could also be treated this way. The visitor center's exhibit installation could be the subject of an enhanced tape description. Touchable models of cacti, especially of the organ pipe cactus and saguaro, could provide excellent tactile material for the visually impaired. A touchable relief map and artifact reproductions should also be considered.

A tape recorded version of the self-guiding booklets for the Ajo Mt. and Puerto Blanco Scenic Drives will be made available for sale to visually impaired visitors as well as visitors who would rather listen to the booklet's message than read it.

Information about accessibility to the monument and its programs should be made available at the visitor center reception area and in a mail-out format.

Non-English-Speaking:

The staff estimates that 10% of the visitors are of international origin but only 5% of the visitors are non-English-speaking. To serve these people, Spanish, German, and French versions of the park brochure are available. The capability of staff members to speak other languages varies as the composition of the staff changes over time.

The estimates of non-English-speakers should be confirmed by more rigorous methods since the result may create a need for expensive solutions. International origin does not automatically require foreign language translations. There is some indication that these are bilingual or even trilingual visitors.

Although the monument is adjacent to Mexico, there is not as much demand for Spanish as one might expect. Nonetheless, the political situation calls for the acknowledgement that this is a border park and it is desirable to welcome our visitors from Mexico. This can best be done by continuing bilingual interpretation for interpretive sites along the border (Gachado, Dos Lomitas, and Quitobaquito) and in the orientation AV program and park folder. Regulatory and explanatory signs that deter crime and protect resources may also be necessary. Perhaps some of the proposed waysides on Highway 85 should have Spanish text. In addition, the use of Spanish and Papago (O'odham) languages should be considered for appropriate places in all media as a way of acknowledging and educating other visitors about the cultural traditions of the area.

When new audiovisual programs are prepared, the staff should determine if there is a need to caption or produce a tape in other languages, and whether one group predominates. Although video programs can be captioned in multiple languages, theater programs may be restricted in their ability to handle English captions as well as multiple foreign languages. A judgment may have to made as to which is the most useful. Systems beyond captioning should be explored.

Special Age Groups:

Senior citizens make up the vast majority of visitors during the busiest season. Interpretive activities are designed to incorporate their interests and suit their physical abilities. Response from these visitors to guided walks and hikes has been very good. Senior citizens vary in their capacity for strenuous activities, just as other age groups do, and it should not be assumed that the age of the majority of visitors consequently means a reduction in ability. However, many appreciate wheelchair accessible trails even if not in a chair. The easy grades, smooth surface, and resting benches are all welcome to seniors. All age groups will appreciate knowing trail distances, degree of difficulty, and special weather considerations.

Proposed improvements in programmatic accessibility of exhibits, publications, and audiovisual programs will help hearing and vision impaired visitors, many of whom are seniors.

A very small percentage of visitors consists of children. The park staff estimates 3% or less. There is a selection of sales items geared to children but no special, personally-guided talks or walks for kids because there are so few, except school groups upon request. The outreach program for schools is the place where children are most apt to be served. This program can be international in scope, as previously described. Children in the Phoenix-Tucson area and Ajo, as well as in the Mexican town of Sonoyta and the Tohono O'odham reservation, can be reached with educational programs.

PERSONAL SERVICES/STAFFING/SPECIAL EVENTS

The interpretive staff at Organ Pipe Cactus is not adequate to present a quality program. Of the monument's total FTEs, 12% are designated for interpretation. The interpretive budget currently accounts for 8% of the total funding for the monument and permits hiring of 2.9 FTEs of interpretive staffing. VIP, SPMA, and SCA positions assist with the workload. This year no funding for seasonal interpreters was available and in some previous years seasonals were funded from special initiatives and other nonbase sources.

The visitor center desk is staffed daily. When funding allows, programs are offered nightly at the campground amphitheater during the busy season and there are two daytime activities each day during the winter. Also, several times a week there are coffees, demonstrations, or other activities that provide interpretation or encourage feedback from visitors about their interests or opinions of park policies and management. There are outreach programs, usually upon request by groups when they visit the monument or when local organizations request a presentation in the nearby town of Ajo. Lack of seasonal staffing means that the interpretive programs described above are severely curtailed; the time may come when the only activity that can be maintained is visitor center staffing.

The cooperating association currently provides \$18,147 a year for sales help in the visitor center. This amount employs three or four persons.

More than 80% of the visitors are program users. This is an unusually high proportion for a park and is related to the level of interest and length of stay of its primary clientele. Because of this, the staff has the opportunity to become acquainted with people and have multiple contacts with the same visitor. This increases demands on the staff to satisfy the interest and need for program variety, but it also increases job satisfaction for interpreters.

However, as described above, interpretive funding is inadequate to professionally run the program and take advantage of this high level of interest. Permanent positions at the GS-4 and 5 levels should be looked at for upgrades to GS-5 and 7 levels. At the base level at least three seasonals

and possibly more are needed. A new permanent position, a cross-cultural educator/interpreter, would be an asset to the staff. This position would coordinate MAB activities in the region, conduct outreach programs in Ajo, Mexico, and on the Tohono O'odham reservation, and would coordinate the annual special event, O'odham Day. Fifty percent of the cross-cultural interpreter's time would be spent accomplishing the duties listed above; the other fifty percent would be in regular interpretive duties. Any real outreach effort that depended on Organ Pipe Cactus staff will probably require a significant increase in the FTE allowance, beyond that required for the cross-cultural interpreter. One of the management objectives listed in the Statement for Management deals with using the interpretive division as an information and public relations branch for management, informing the public of resource and management issues. This also takes staff to accomplish.

O'odham Day, mentioned above, is the only annual special event celebrated in the monument. It is timed to occur during Archeology Week (observed in March each year throughout Arizona.) O'odham Day is a two-day event which focuses on the continuing cultural traditions of these people. Demonstration tables and temporary exhibits on the visitor center patio interpret traditional dry-land farming, basketry and pottery, native plant uses, and language. People from the O'odham reservation staff the demonstration tables and talk to visitors about their traditions. Basketry and pottery methods are demonstrated also. Slide presentations are given on archeology and early Indian history by NPS archeologists. The purpose of the event is to educate the public and to give the O'odham a chance to celebrate their own culture. The whole tribe is invited and many come. For some of them, particularly their young people, it is an educational experience too. Park visitors and people from the local community attend.

This event began in 1991 and was successfully repeated in 1992. Professional quality videotaping of the program next time would provide material for use in the visitor center, on an interim and permanent basis (described in the pertinent sections of this plan).

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The General Management Plan, Development Concept Plans, and this Interpretive Prospectus are intended to guide the future of the monument. Since the provisions of these plans may take some time to implement, interim measures could be necessary. The extent of these will depend on the length of the interim period. The park management should periodically reevaluate the need for interim measures.

1. Revise the slide program screened in the visitor center's theater. This program is more than 20 years old. While the general subject matter, format, and length are good, the visuals and narration should be updated. Accessibility for special populations should be improved. This work is underway.

Length - 6 to 10 minutes

Content - introduction to monument, significance of resources, survey of resources

The program should stimulate visits to the resources. It is not intended to give the details of what to see and do (handled instead by publications that can be taken along on the trip).

2. Upgrade theater AV equipment for new program. New equipment such as speakers and additional projectors will be needed. During the planning for the new program the issue of accessibility should be addressed because it has equipment implications and software repercussions that cannot wait until the end to be dealt with. Each system for providing for visually impaired, hearing impaired, and non-English-speaking visitors has pros and cons to weigh and vary in cost. The need to provide these services should be determined. Caption systems, alternate sound tracks, operating methods, etc., must be evaluated.

Equipment upgrade has not yet been funded so this area should be explored now to ensure that the funding request reflects decisions made on reliable information about accessibility provisions and the other requirements for this new program.



3. Other theater improvements

New carpeting could be installed to improve acoustics. New seating would also be desirable; Harpers Ferry Center can offer advice and sources for good looking and comfortable stackable chairs.

4. **Produce new AV programs in exhibit area.** These changes should be based on a clear definition of the role of each program and be based on subject matter that is best suited to the medium.

Since the theater program is presenting an overview, other supplementary programs should focus on smaller pieces of the story. They should be shorter, to promote turnover and avoid bottlenecks in these small alcoves in the busy season. The problem of sound spill may be handled by captions, hand sets, or lack of narration (visuals only). The programs should be closed-captioned if there is narration.

Some preliminary observations on the existing programs: --The day/night diorama features a good subject but the method of presentation is outdated and amateurish. --The floral displays of the desert spring make a good subject for an AV program, easily depicted in visuals, and may not even need narration.

--The slice of the Sonoran Desert program fills a special need, in that it is captioned for hearing-impaired visitors, which the theater program isn't at present. The subject matter does overlap somewhat with the theater program. The objective should be analyzed before the program is redone, especially in view of the fact that the lack of captioning will be remedied in the theater before long. --Conversion to video format (laser disc) of the existing slide programs would eliminate the equipment failures of the past but just straight transfer of existing programs is not recommended. Upgrade of equipment should be accompanied by production of new programs and improved accessibility.

--Human occupation in the desert was previously the subject of an AV program but it was removed some time ago. The subject is recommended for a short video program in the future. Short-term, a relatively easy aspect of the subject that could be filmed and assembled locally is a production that documents the O'odham Day events.

5. Evaluate exhibit area for upgrading. This is a rather small area with corresponding limits to the amount of material it can handle. At least half of the space is occupied with the

AV alcoves mentioned previously. The extent to which it will be cost effective to re-do the whole area as an interim measure should be evaluated. At a minimum these improvements could be made:

--Improve artifact display related to the human history story (in existing glass case).

--Retrofit the existing deserts exhibit.

- a. Add text to typify each desert
- b. Add the global context (30 degrees latitude, MAB)

6. Use walls of the AV theater for special, changeable shows of graphics.

7. Produce a general full-color interpretive sales publication, a booklet on Quitobaquito, and a hiking guide for ORPI.

8. Improve programmatic accessibility for special populations.

- a. Produce a touchable topographic relief model. Scale of model must fit available VC floorspace, which is limited (in progress).
- b. Survey needs for additional accessibility work. If necessary, implement captioning or other provision to allow non-English-speaking and hearing impaired/visually impaired visitors to have access to the narration of AV programs.
- c. Produce touchable models of several species of cactus, for the visually impaired.

9. Increase emphasis on the organ pipe cactus. If the monument 's name is not changed, consider higher profile signing on specimens outside the visitor center entrance. Consider large panel or banner inside, depicting this cactus. Many visitors arrive at the VC without having seen the cactus; the most obvious cactus on the drive through the monument is the saguaro. This confuses people.

10. Install longer posts on trailside plant ID labels. With mostly older visitors, many wear bifocals; labels that are higher off the ground will be easier for them to read than the current low-to-the-ground signs.

11. Upgrade the campground amphitheater--better seating, lighting, screen, projection booth, wiring, and trail.

Clearly this is a long list and will take funding and time to accomplish. It may not all be done. If the funding of a new visitor center begins to look eminent, short-term interim-type actions would no longer be cost-effective.

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APPENDIX

LOCATIONS AND THEIR INTERPRETIVE THEMES

Organ Pipe Cactus National Monument

1. Ajo Mt. Drive (excluding Bull Pasture)

- "Lush and Diverse" (Ariz. Upland vegetation)
- "Geology" (good lava flows, tuffs, basalt on Tillotson, etc.)
- "Water" (area of highest precipitation in park, good habitat variety)
- "Pristine Baseline" (good vistas, pure views like Bird's Eye Point)
- "Desert Biogeography" (plant communities, soil types, bighorn and other animals Ajo Mts.)
- "Desert Adaptation" (good examples of nurse trees and other plant/plant or plant/animal relationships)
- "Unique Species" (should ID organ pipe here, good examples of S-facing slopes and habitat)

<u>Note</u> re: Ajo Mt. Drive - keep this drive, in general, largely natural history interpretation and use other sites in ORPI to do cultural interpretation that are better suited to mining and ranching history, and prehistory interpretation.

2. Bull Pasture

1/23/91

- "Pristine Baseline" (good vistas of pure desert)
- "Unique Species" (Agave schottii treleasii, Ajo rock daisy, possibly, our species of Vaquelinia)
- "Desert People and Lifestyles" (hideout for Villista's men and use of Pasture by Birdie Miller and Grays as a pasture)

<u>Note</u>: the group felt that the experience of hiking to Bull Pasture might be ruined by the presence of interpretive signs, so more discussion about this will be needed. Maybe the media chosen should be as inconspicuous as possible.

- 3. <u>Puerto Blanco Drive</u> (excluding Quitobaquito and Senita)
 - "Lush and Diverse" (contrast with Ajo Mt. Drive, different plants, hence more diversity)
 - "Unique Species" (subdivisions merging, good organ pipe habitat, Atamisquea and Ascia)
 - "Shaping the Land" (Bonita Well, Golden Bell, broken ocotillo near Twin Peaks, international boundary/Gadsden Purchase, archeological sites along P.B. Drive)
 - "Geology" (Pinkley Pk, lava flows P.B. Mts., granites in Sonoyta Mts., mineralization, example of desert pavement)
 - "MAB" (encroaching development from Mexico)

- "Desert Biogeography" (plant communities, drainages, good examples flora of various communities, best wildflowers in park on N. side P.B. Mts.)
- "Desert Adaptation" (good examples of other relationships between animals/plants or plants/plants not mentioned Ajo Mt. Drive)
- "Desert People and Lifestyles" (at Golden Bell, life of prospector; at Bonita Well, life of a cowboy)

4. Quitobaquito

- "Unique Species" (pupfish, mud turtles)
- "Species Protection" (NPS role in pupfish protection, migratory bird use of wetland, historic pomegranate and figs)
- "Shaping the Land" (Quitobaquito history and human impacts there over time such as Orosco occupation, NPS management, etc.)
- "Environmental Impact Lessons" (golden shiner introduction, overgrazing, possible water drawdown, farming period, alteration of natural springs, barrenness and trampling, border impacts of noise and traffic along fence)
- "Global Biodiversity" (examples of migratory bird problems i.e. even if we protect habitat, we can't control it beyond our borders)
- "Water" (water is it at Quitobaquito rarity of desert springs)

5. <u>Senita Basin</u>

- "Unique Species" (elephant tree, senita, organ pipe, jatropha cinera)
- "Geology" (granites, mineralization)
- "Species Protection" (plants such as elephant tree, which are rare in U.S., may not receive much protection elsewhere in their range)
- "Desert Biogeography" (Gulf Coast phase representatives in a warm valley, granite soils)

6. Milton Mine

- "Shaping the Land" (best mining scar in ORPI, trail itself is a scar)
- "Environmental Impact Lessons" theme (rationale: mining impacts)
- "Geology" theme (rationale: mineralization in granite, schists, gneiss, copper/gold geology, mineral formation malachite & azurite)

7. Desert View Trail

- "Geology" (hands-on opportunities to see caliche, metamorphosed tuff and view lava flows on Twin Peaks and granites in Sonoita Mts.)
- "Desert People and Lifestyles" (good ethnobotany in Mixed Cacti community)
- "Desert Adaptation" (good examples of common plants in Mixed Cacti plant community)

8. <u>Victoria Mine</u>

- "Shaping the Land" (mining impacts)
- "Geology" (gold & silver geology, formation of granites and quartz)
- "Desert People and Lifestyles" (life of miners in small mining community, stone cabin - example of rock architecture)

9. <u>Blankenship/Gachado</u>

- "Shaping the Land" (contrast with Mexico land use across border, land changes associated with ranching such as clearing land, digging first wells, use of mesquite for corrals and fires)
- "Desert People & Lifestyles" (ranching lifestyle such as adobe architecture, trap gates, etc)
- "Environmental Impact Lessons" (ranching impacts such as erosion, barren land, non-native plant introduction, firewood collection)

10. <u>Alamo Canyon</u>

- "Desert People & Lifestyles" (ethnobotany opportunities of woodland plants, archeology resources in mortar holes, corral, well, adobe and brick houses)
- "Shaping the land" (all archeological & historic remains, such as the well, corral, road, mortar holes)
- "Water" (canyon environments, flowing water periodically, well with water close to surface, historic & prehistoric choice of canyons for home sites)
- "Desert Biogeography" (best example of oak woodland in park, excellent example of jojoba-evergreen community)
- "Unique Species" (Berberis harrisoniana, Ajo oak, Ajo rock daisy)

11. <u>Alamo Campground</u>

- "Environmental Awareness" (where people are - in campground, need for and opportunities for "good camper" messages)

12. Bates Well

- "Desert People & Lifestyles" (transportation routes, Tjuni Gaatch Hia Ced O'odham cactus gathering site, support base at Bates for Growler mining district, ranching activities, 1870 well, corral, etc)
- "Shaping the Land" theme (rationale: roads of transportation routes, changes with ranching, prehistoric use, Hia Ced O'odham use)
- "Water" theme (rationale: transportation routes, importance of Bates Well for early travellers)

13. Bates Valley

- "Desert People & Lifestyles" (Hohokam prehistoric use of trail for salt pilgrimages and other travels, Hia Ced use for cactus fruit gathering trips and other travels, use by ranchers, use by bootleggers from Tinaja Estufa still, traditional use by illegal aliens, use by modern hikers)
- "Water (Tinaja Estufa's use by prehistoric cultures campsites, shells, petroglyphs, later by bootleggers)
- "Desert Adaptation" (good plant examples in Mixed Cacti & Mixed Shrub communities for hands-on plant ID)
- "Geology" (outstanding landform features in valley, Kino Pk. good example of lava flows and a basalt cap, spectacular tuff cliffs North end of valley)

14. Growler Valley/ West Side Road

- "Unique Species" (Sonoran pronghorn)
- "Desert Biogeography" (best example of Calif. Microphyll subdivision and creosote/bursage community, habitat for western K-rat D. deserti, sidewinder and pronghorn)
- "MAB" theme (rationale: cooperative efforts with USFWS for pronghorn management, i.e. fenceline removal, recovery team efforts, etc)

15. <u>Campground</u>

- "Environmental Awareness" (this is where the people are and the greatest opportunity to provide "good camper" messages, "good park user" messages

16. North Boundary Contact Station

- "Environmental Awareness" (get to folks just as they come into park with what they can and can't do)
- "Desert Biogeography" (as people enter, make sure they know they are in a national park, also give basic orientation to topography of the park)

<u>Note:</u> general rationale for some kind of welcome and basic orientation at the north entrance is that we should do more than just collect fees as people enter the monument. There are also opportunities for persuasive arguments for obeying regulations.

17. <u>Highway 85</u>

- "Lush and Diverse" (contrast vegetation inside boundary with landscape outside, introduce Sonoran Desert, introduce organ pipe cactus)

- "Pristine Baseline" (from an overlook along highway, introduce concept of pristine desert and role of park as baseline)

<u>Note</u>: no specific locations are indicated, but there are some possibilities for interpretive pullouts near MP 61, MP 66 and MP 73.5. All team members felt there should be some interpretation along Hwy. 85.

18. <u>Resource Center/Science Center</u> (include patio and porch area and possible walkways around building)

- "Species Protection" (NPS role in preservation)
- "Global Biodiversity" (NPS isn't whole solution)
- "Pristine Baseline" (explain ORPI's reason for being a park)
- "Scientific Research" (research center, current research, GIS system)
- "MAB" (MAB activities coordination at resource center)
- "Environmental Impact Lessons" (nursery, revegetation programs)
- 19. Visitor Center (includes patio exhibits and trail around V.C.)
 - "Lush and Diverse" (introduce Sonoran Desert and place ORPI in it)
 - "Desert People & Lifestyles" (introduce all cultural history)
 - "Shaping the Land" (introduce idea that all people shaped land) -
 - "Environmental Awareness" (backcountry ethics, good visitor ethics)
 - "Desert Biogeography" (introduce basic desert biogeography)
 - "Desert Adaptation" (introduce basic desert ecology)
 - "Unique Species" (validate why this is national park- how boundaries were drawn)
 - "Night Skies" (mention value of night skies)
 - "Water" (introduce importance of water in arid environments also a nice design thread for a museum)
 - "Geology" (introduce basic geology)
- 20. Personal Services Walks, Talks, Evening Slide Programs

<u>Note</u>: any theme can be interpreted in personal services, however, below are those themes that are much <u>better</u> interpreted in walk or talk because no specific locations exist with focal points that address these themes.

- "Species Protection"
- "Night Skies"
- "Environmental Awareness"
- "Global Biodiversity"
- "Scientific Research"

<u>Note</u>: The material above was developed by the ORPI interpretive staff (Cheto Olais, Caroline Wilson, Brian Suderman and Marker Marshall) and the superintendent (Harold Smith) in two meetings in Organ Pipe, January 10 and January 18, 1991.



United States Department of the Interior



NATIONAL PARK SERVICE Western Region 600 Harrison Street, Suite 600 San Francisco, California 94107-1372

IN REPLY REFER TO:

K1815 (WR-OI)

23 SEP 1992

Memorandum

To: Manager, Harpers Ferry Center Attention: Chief, Division of Interpretive Planning

From CTING Regional Director, Western Region

Subject: Approval of Draft Interpretive Prospectus for Organ Pipe Cactus

The draft Interpretive Prospectus for Organ Pipe Cactus, submitted for review in June 1992, is hereby approved by this office subject to consideration of the comments made in our memorandum of August 4, 1992.

Linda Finn has done an excellent job in keeping the project flowing and writing an effective and comprehensive plan.

Aur albert

cc: Superintendent, Organ Pipe Cactus General Superintendent, SOAR



United States Department of the Interior

NATIONAL PARK SERVICE Western Region 600 Harrison Street, Suite 600 San Francisco, California 94107-1372

K1815 (WR-OI)

3 1 JUL 1992

Memorandum

To: Manager, Harpers Ferry Center Attention: Linda Finn, Harpers Ferry Center From: DEPUTY Regional Director, Western Region

Subject: Comments On 2nd Draft Organ Pipe Cactus Interpretive Prospectus

Organ Pipe Cactus has made extensive suggestions and comments to the draft. We have added our comments directly onto the draft document marked up by Organ Pipe Cactus.

Most of Organ Pipe's comments are to correct minor errors, improve statements about accessibility, and expand information about the topics. However, an extensive re-write was done on the trails section by the park. We feel most of the park's comments are valid and should be included.

The staff of the Regional Office feels that the park should take a stronger role in interpreting Native American relationships to the monument than is outlined in the Interpretive Prospectus.

Thank you for your hard work and continued cooperation in making this Interpretive Prospectus the best it can be.

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Énclosures

Superintendent, ORPI cc: Frank Sumrak, SOAR Lynne Nakata, WR



United States Department of the Interior

NATIONAL PARK SERVICE Western Region 600 Harrison Street, Suite 600 San Francisco, California 94107-1372



IN REPLY REFER TO:

09 JUN 1992

Memorandum

K1815 (WR-OI)

To: Manager, Harpers Ferry Center

From: ACTING Regional Director, Western Region

Subject: Interpretive Prospectus, Organ Pipe

In reference to your memo of May 5th concerning the advisability of continuing the work on the Interpretive Prospectus (IP) for Organ Pipe Cactus, Rick Smith of the Western Region, Division of Interpretation set up and conducted a conference call with Linda Finn of your staff, Larry Norris, Denver Service Center Team Captain for Organ Pipe's General Management Plan (GMP), and staff members from Organ Pipe Cactus.

Issues and concerns were discussed, and all parties agreed that the GMP process was far enough along and had enough information to allow an IP to progress. We therefore recommend to you that the IP planning process continue.

We are very pleased that this important planning document for Organ Pipe Cactus will be completed.

Willatta

cc: Supt. ORPI Mgr., DSC-TWE Dave Dame, HFC/DSC Larry Norris, DSC Linda Finn, HFC Supt., SOAR