

Sunset Crater National Monument

Wupatki National Monument

Interpretive Prospectus

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INTERPRETIVE PROSPECTUS

SUNSET CRATER NATIONAL MONUMENT
and WUPATKI NATIONAL MONUMENT

ARIZONA

prepared by:

Division of Interpretive Planning
Harpers Ferry Center
National Park Service

December 1983

Approved by memorandum
of December 2, 1983, from
Regional Director Kerr.

INTRODUCTION

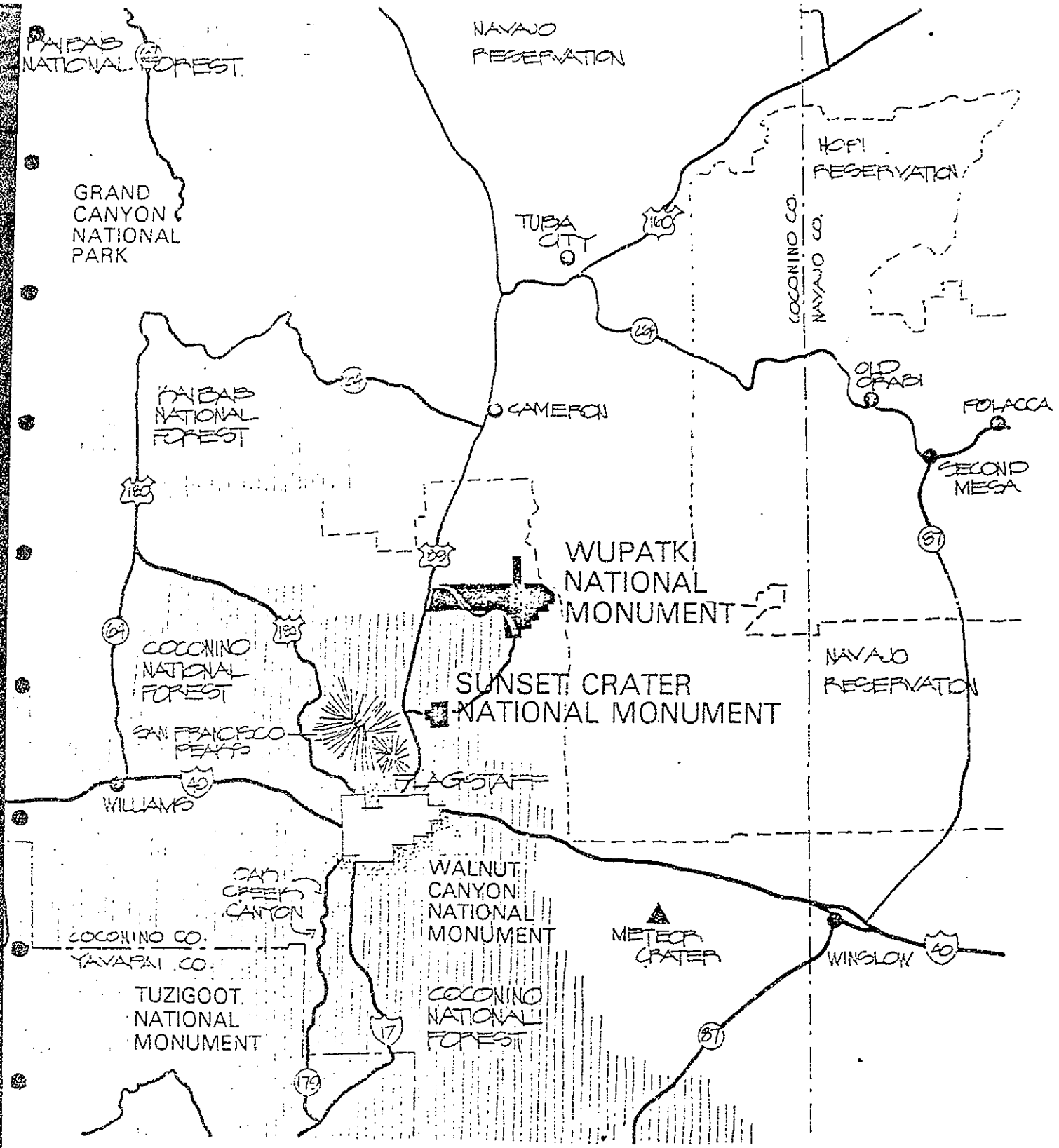
The Interpretive Prospectus is the key to interpretive planning. It carries the planning process a step beyond the General Management Plan, issued in 1982.

The prospectus is primarily a media prescription. It establishes themes and selects the media that are best suited for the interpretation of those themes. It deals with exhibits, waysides, audiovisual programs, publications, and personal services. The plan gives more emphasis to media produced by the Harpers Ferry Center. Personal services to be provided by the site's interpretive staff will be treated in greater depth in an operations plan, prepared by the staff and called "Statement for Interpretation."

The prospectus is not an end in itself, but rather the foundation for the next phase of the process--media production. As funding is provided, individual projects are then designed and produced.

LEGISLATIVE COMPLIANCE

This interpretive prospectus implements the recently completed General Management Plan (GMP) for Wupatki and Sunset Crater National Monuments which documents compliance with the National Historic Preservation Act, the National Environmental Policy Act, the Endangered Species Act and other regulations. Since the GMP is covered by the Programmatic Memorandum of Agreement, implementing actions may be carried out with internal National Park Service review procedures specified in NPS-28.



REGION

MICROFILM

WUPATKI AND SUNSET CRATER
NATIONAL MONUMENTS/ ARIZONA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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THE RESOURCES

Geological

Sunset Crater is a symmetrical cinder cone, 1000 feet in height. John Wesley Powell, in describing his explorations in the region, wrote: "A portion of the cone is of bright reddish cinders while the adjacent rocks are of black basalt. The contrast in colors is so great that on viewing the mountain from a distance the red cinders seem to be on fire. From this circumstance the cone has been named Sunset Peak."

The cinder cone is flanked by lava flows on two sides--the Bonito flow and the Kana-a flow. Parts of the jagged surface of the aa lava flows were covered by ash; other parts are exposed, their surfaces appearing remarkably recent, as indeed they are by geological time frames. The most recent activity occurred only 700 years ago.

Cinder cones are described as one-time phenomena. The cinders build up around a central vent over a period of time. Further volcanic activity may take place nearby but not again at that particular site. In the case of such cones the "one-time" must be thought of on a geological scale rather than a human scale. Paricutin volcano in Mexico, very similar to Sunset Crater, erupted for nine years beginning in 1943. The formation of the cone was accompanied by lava flows and it was surrounded by many older cones. Recent investigations have produced findings indicating that the eruption at Sunset Crater was intermittent over a 200-year period.

The Sunset Crater is one of several hundred cones scattered around the San Francisco Peaks volcanic field, centered north of Flagstaff. The field covered 3000 square miles and is the second largest in the United States. It is situated on a plateau composed of sedimentary formations averaging 5000 to 7000 feet above sea level.

The activity in the volcanic field produced not only cinder cones but great ash falls, basaltic flows, and lava of a basaltic, rhyolytic, andesitic, or dacite

character. Squeeze-ups may be seen, curious formations shaped by their passage upward through cracks in older flows. In one case a lava tube exhibits an accumulation of ice. Ejecta from the volcanic eruptions take on a fascinating array of shapes, sizes, and textures--ranging from ash and cinders to volcanic bombs.

Although Sunset Crater National Monument includes in its 3,040 acres only the cinder cone and its lava flows, the scenery plainly in view from the monument includes many other volcanic phenomena outside the boundaries. The double dome of O'Leary Peak, the composite volcano of the San Francisco Peaks, and the other cones that are visible in almost any direction give context to the events at Sunset Crater.

Archeological

Hundreds of archeological ruins are found in the region--on national forest land, private land, and in the 35,253 acres of Wupatki National Monument. The structures range from remains of agricultural activities such as terraces, to petroglyphs, simple pithouses, field houses, and large masonry pueblos of a hundred rooms. The largest and most impressive ruins in the monument are Wukoki, Wupatki, the Citadel, Nalakihi, and Lomaki. Wupatki ruin, directly behind the visitor center, features an unusual masonry "amphitheatre" and a ballcourt more characteristic of prehistoric cultures which existed in southern Arizona and Mexico. A few of the large accessible ruins have been stabilized. The bulk of the sites are not accessible to the general public and are not stabilized.

Some of the structures are pre-eruptive (before the Sunset Crater eruption) but most are post-eruptive, associated with the time period of A.D. 1070 to 1250.

Archeologists began work at Wupatki in the 1930's. The first excavations were made by the Museum of Northern Arizona. In the 1940's and 1950's the National Park Service conducted some research and ruins stabilization and at the present time a survey of the monument is in its third year of a five year

project. This project is under the auspices of the Southwest Regional Office's Division of Archeology, Southwest Cultural Resources Center.

Artifacts recovered from these activities are primarily located in two major collections: at the Museum of Northern Arizona outside Flagstaff and the National Park Service's Western Archeological Center in Tucson. There are also some pieces on display and in the collection at the Wupatki visitor center.

The artifacts are characterized by an interesting diversity; they represent several different culture groups known to have lived in the general region as well as objects presumed to have come from greater distances, through trade networks.

The interpretation by archeologists of this mixture of artifacts and the population dynamics reflected in the ages of structures has evolved during the past half-century of study. The latest survey, still underway, is expected to produce a different interpretation than that of the earliest researchers, based on some new evidence and re-evaluation of older findings.

EXISTING CONDITIONS

Wupatki and Sunset Crater National Monuments were established by presidential proclamation in 1924 and 1930, respectively. The major development including construction of visitor centers dates from the Mission-66 era. The Sunset Crater visitor center is located on national forest land and houses an exhibit interpreting U.S. Forest Service activities and recreational opportunities in the region. On occasion Forest Service interpreters provide evening programs at the Bonito campground administered by the National Park Service, and located across the road from the visitor center.

One superintendent manages both national monuments. They are within 15 miles of each other and both are accessible along a 36-mile loop road off U.S. Highway 89, a major route between Flagstaff and the Grand Canyon. The combined visitation exceeded half a million in 1981. An interesting pattern has been recognized for many years: the smaller of the two monuments, Sunset Crater, has nearly twice the visitation of Wupatki, a situation that seems attributable to (1) the distance from the Highway 89 turn-off to the first important feature and/or visitor center, (2) the scenery at the respective entrances, and (3) the time budgets of visitors.

Interpretation at the sites has been guided by an Interim Interpretive Prospectus (1975). More recently a General Management/Development Concept Plan was approved in 1982. This recent plan does not call for major new development but describes a number of well-conceived changes in parking areas and other alterations that will significantly improve the experience. In some cases visitor safety is improved and in other cases the impact of roads and parking on the resources is lessened. An example of the latter is the relocation of the parking and loop road at a greater distance from Wukoki ruin. Two new contact stations are recommended--one for each park. The station at Sunset Crater will functionally replace an existing old building at the base of the crater parking area, but in a different location. Some of the proposals in the GMP/DCP will be implemented

shortly as part of a major road reconstruction project funded under the PRIP program. The front exterior of the Sunset Crater visitor center is being face-lifted soon under the same program.

The condition of existing interpretive media varies. Wayside exhibits at both parks are the most in need of attention. They are old and inadequately cover the major points of interest.

The contents of Wupatki's visitor center are at least twenty years old. Artifacts are exhibited of both the prehistoric era and of the modern Navajo. (Navajos are park neighbors and use park roads for access). There is also a reconstruction of a pueblo room.

Information now contained in exhibits and many publications at Wupatki visitor center is founded on early research; therefore, some revision can be expected to be necessary as the results from current research are compiled. There is some newer information available in the geological field as well, but the archeological research at Wupatki is expected to significantly alter the existing information base.

Sunset Crater's visitor center was the recipient of new exhibit and AV contents in 1980. They have not proven to be entirely satisfactory, mostly due to lack of cohesiveness and incompleteness.

A variety of personal services is offered, concentrated in the summer months when visitation is greatest. One program that has been available for most of the past several years is a guided bus trip to the top of O'Leary Peak. From that elevation there is a panoramic view of Sunset Crater and its surroundings. This trip was initiated as an alternative after the foot trail to the top of Sunset Crater was closed to the public in 1974 and considerable labor expended to return the former trail route to a natural appearance.

THEMES

Sunset Crater and Wupatki are two adjacent parks with dissimilar resources but connected by the volcanic effect of Sunset Crater on generations of people who lived at Wupatki. Archeology and geology intertwine to create a story with more dimensions and more interest than might be the case otherwise. The total is greater than the sum of the parts. The resources themselves are related and, despite changing interpretations, the scientific disciplines that have contributed to our knowledge of the resources have collaborated as well.

The volcanic activity was not a one-time catastrophe but a continuing influence. In many aspects of the lives of the people this influence can be seen.

One piece of evidence can be found in the masonry wall of a 700-year-old dwelling. Pastel sandstone and limestone from the surrounding plateau alternate with the rough, irregular chunks of rock spewed out by the volcano.

The native potters used volcanic cinders to temper some pieces. The pottery known as "Sunset Red" glows with a smooth reddish-brown coloration on the outer surface; the inner surface is a smudged gray-black--coincidentally mirroring the colors of Sunset Crater.

Descendants of the people who lived here believed the home of the Kana-a kachina to be Sunset Crater.

The volcano had broader effects, both positive and negative. In the first eruption some homes were smothered by ash. On the other hand, the same ash promoted moisture retention, thereby improving agriculture. This made the region more attractive as a place to live.

Many scientific disciplines have contributed to this knowledge. Interestingly, the Sunset Crater events were first dated by matching growth rings of wood in pre-eruptive and post-eruptive prehistoric dwellings with a master chronology developed by Dr. A. E. Douglass and co-workers. Carbon-14 dating has been used on other substances found in dwellings.

Early archeological pioneers like Dr. Harold Colton and his colleagues found evidence of increased numbers of structures after the major ash fall. There was also a change in styles of artifacts and puzzling mixtures of traits, accompanied by increased colonization of lower elevations in the hotter and drier pinyon-juniper region. (Pre-eruption sites were located more often in upper elevations characterized by ponderosa pine.) From these clues it was postulated that the ash from the volcano created better farming conditions at formerly marginal areas. As a result, a land rush of new colonists of several cultural affiliations entered. Because of their closer proximity a more rapid exchange of ideas was set off, changing lifeways in this frontier.

For several decades this remained the dominant interpretation for the evidence collected in the Sunset Crater-Wupatki region. A recent wave of research and study, sifting through past evidence and making new findings, is producing a ferment of interpretive activity, with other hypotheses suggested. The information derived from several branches of knowledge has created sparks setting new fires of discovery.

The ideas emerging from this research activity are these: the increase in number of structures is undeniable, but many are now believed to be field houses connected with outlying agricultural fields and only inhabited part-time. The post-eruptive population increase or at least greater range of activity is paralleled in other parts of the region, so it is not unique to Wupatki. The groups involved had been in the region for some time.

The increased agricultural possibilities were apparently real and related in part to the mulch effect of ash, but there was concurrently a region-wide period of increased moisture and more favorable growing conditions.

The era was also characterized regionally, not just locally, by increased contact and circulation of varying cultural ways that showed up in such things as the gradually growing predominance of masonry structures over the earlier pithouses constructed by all the cultural groups. In this area are believed to have been Kayenta and Winslow Anasazi, Cohonina, and Sinagua. The determination of which sites are affiliated with which groups has also been subject to changing opinions. At one time the numerical predominance of artifacts of one cultural type was the deciding factor. Now a more complex matrix of cultural interchanges is being theorized.

The drama of a land rush and fertile exchanges between groups all fomented by the Sunset Crater volcanic activity decreases in this interpretation. But the newer conclusions fit with natural evolutions, with influences and patterns that could apply in general terms to many cultures in many eras. The fact of Sunset Crater's effect on the local population is unquestioned; it is instead the extent of the effect that is being redefined. It is now thought that rather than an agent of cultural change, the volcano was one of the environmental conditions with which the people contended, like sparse rainfall and nutrient-poor soils or the short growing season of the high elevation plateau. In addition, it must have created pyrotechnic spectacles on occasion.

Accordingly, we should expose visitors to the physical evidence of artifacts, structures, and landscapes, accompanied by interpretation based on research. Also we should expose them to the mystery that will always be at the heart of archeology. As one archeologist has put it, lacking a time machine we will never know everything, never entirely dispel the mystery. Although a single pottery sherd can tell quite a tale, feelings and customs--the more abstract parts of a people's existence--can never be completely extracted from the fragments of material

culture that have survived. In many ways that makes for more fascinating interpretation for park visitors. In the past the mystery has been presented primarily in terms of the fate of the people who once lived here and why they abandoned the area. Today we can at least begin to address many other questions. In doing so, we must not forget that they were fellow human beings. While it is not possible to know them as individuals, we can still recognize them as people and gain some insights into their lives.

The excitement of new knowledge has not been restricted to archeology. Geologists, working with the paleomagnetic method only developed in the last 30 years, are studying Sunset Crater and finding that the sequence of events was longer term than initially supposed. The eruptive history of the crater extended over a period of nearly 200 years--a discovery of interest to archeologists as well. In an interesting reversal geologists have returned a favor: the first dating of the volcano came from the application of archeological techniques, now paleomagnetism defines the extent of the period of volcanic influence on the native people.

The earliest Sunset Crater volcanic event was an extensive ash and cinder shower that occurred between 1064 and 1065. Showers of ash and cinders may have continued until about A.D. 1090 or later and the cinder cone was partially built. The affected area was more than 800 square miles. The Kana-a lava flow erupted in about 1150, followed by a restricted deposit of red and black cinders. Bonito lava flow erupted in about 1220. Further growth of the cinder cone may have occurred at this time. The final event was the eruption of red cinders that form the present rim of the cinder cone, in about 1250. On a purely geological level, the information about the Sunset Crater formation increases our knowledge about volcanism.

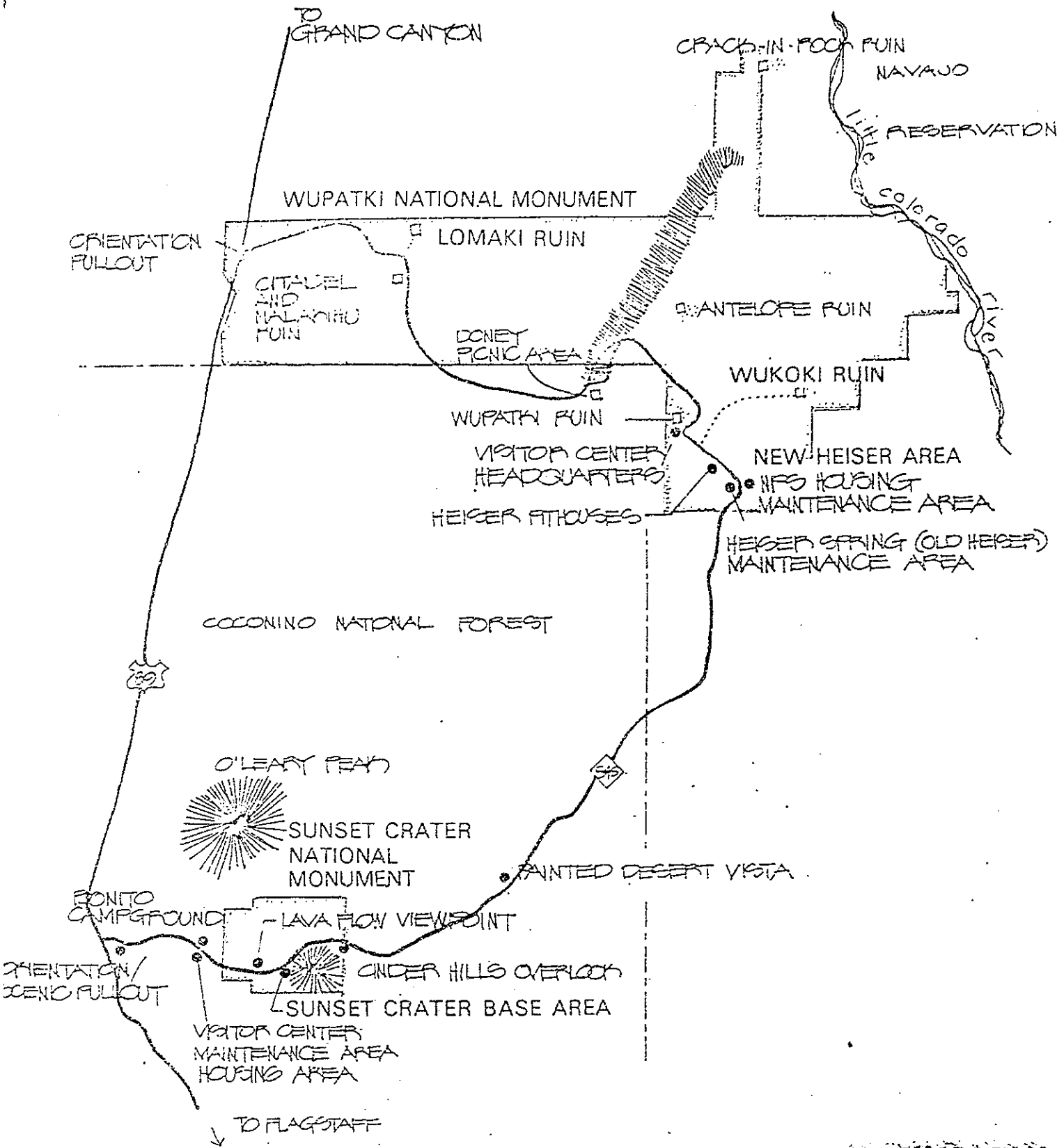
In summary, the themes that will be interpreted at Wupatki and Sunset Crater National Monuments will be archeology and geology of the two adjacent parks, with the added fillip of grafts between these.

OBJECTIVES

To interpret the geological events that occurred at Sunset Crater, placing them in context in the larger setting of the San Francisco volcanic field.

To interpret the people who once lived at Wupatki-- their everyday existence, their relationships, their place in prehistory, and the effects on them of larger influences of the period.

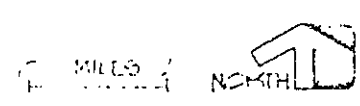
To relate the archeological story to the geological story, particularly the impact of the volcanic events on the native population, to the extent that the ties are supported by the latest research findings.



ON MICROFILM

EXISTING CONDITIONS

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THE PLAN

In this section the recommended approach to interpretation is detailed and themes are assigned to media. The media proposals will recognize a major emphasis for each monument but not neglect the relationships. Although Sunset Crater was established for its geological resources, there are pre-eruptive pithouses nearby. Wupatki was preserved for its archeological resources but the people who lived at Lomaki, Wukoki, and the other settlements were affected in a number of ways by the volcanic activity. Furthermore, the deep earth cracks and blowholes at Wupatki are part of a story of some interest--the sedimentary geological formations that underlie the ruins.

In addition to the exhibits, waysides, and audiovisual programs recommended here, the themes will also be handled in a variety of publications and personal services. The provisions of this plan will not require personnel beyond current levels.

Parkwide Waysides

A system of parkwide waysides is needed to identify and interpret major features of interest that a visitor encounters as he or she drives the park road and walks trails. The system will include both monuments. It is described in detail in the appendix to this plan. As a summary statement regarding the nature of the waysides, it can be said that some will provide orientation at park entry points, some will orient visitors to specific trails or to individual ruins, and others will supply roadside interpretation of particular features that are encountered, such as the Bonito lava flow. Waysides may be vertical in sheltered structures where attention-getting is required--as at entry points. In other cases they may be low, obliquely set, and less conspicuous in design. They will employ both text and graphics.

The need for such waysides is urgent. Many visitors do not stop at visitor centers or arrive after closing time, and for them this will be the only interpretation of park features they will receive. For those who do stop at the visitor centers, the signed features will provide concrete examples of the

concepts and processes they learned about at those buildings.

Wupatki Visitor Center

The new exhibits and audiovisual program that are described here are intended to completely replace all older material now housed in the visitor center exhibit area. The remainder of the area accessible to the public is devoted to an information desk and publications sales in a reception space. Plans are already under way for upgrading the reception area, in particular the sales display units. Consequently, for the purposes of this project the assumption is made that the exhibit area will comprise the bulk of the rehabilitation work needed with lesser attention given to the reception space.

The exhibit area occupies one half of an octagonal room. It is a cul-de-sac containing about 700 square feet of floor space. In this space will be installed new exhibits employing many artifacts that have been found. Some objects now on display may be reused; there may also be a need to acquire others from various archeological depositories. These objects will help visitors understand the life of the former inhabitants of Wupatki.

Tools, ceramics, ornaments, and other objects will be grouped in useful ways, supplemented with graphics. Perhaps a large illustration of a central village with outlying field houses can be tied to these groupings as the main exhibit unit that interprets the daily life of the people in this environment. In all appropriate exhibits the impact of volcanic activity should be included.

Special topics will be developed as well. Trade objects are plentiful and will supply a nucleus for an exhibit. Objects that are related to apparent social hierarchies are another possibility.

The mixture of traits related to different cultural groupings can be demonstrated by various artifacts and the groups identified. Furthermore, there are objects seemingly of mixed parentage--perhaps northern technique but southern patterns or designs.

In this way, the points can be made that (1) different culture groups inhabited the region, (2) these groups can be identified by certain characteristics exhibited in material culture, and (3) the puzzling incidence of a mixture of objects at a site and, additionally, of mixed characteristics in one object has led to a number of interpretations by archeologists. The emphasis in this exhibit will be on what these objects can tell us about the people who lived here, recognizing that there have been divergent opinions.

The previously described exhibits are all intended to put modern visitors in touch with the former native inhabitants in a humanistic way, with little emphasis on scientific terminology. In addition, a video program will feature an archeologist in a two to three minute presentation. In the program he or she will be interviewed on camera and will describe, perhaps at a field site, a selected aspect of aboriginal life that has been reinterpreted and the reasons for it. Possibly a few art illustrations will be interspersed. The purpose of the program is to convey a little of the excitement associated with archeological detective work. A secondary, perhaps subliminal, preservation message will be that artifacts are pages of history and that activities such as potsherd collecting are destructive.

To avoid sound spill problems, some type of hearing devices for several persons will be required as part of the video installation. Also, the spatial placement of the unit within the room must be carefully planned to facilitate visitor flow.

A decorative element either in the exhibit or reception area might employ pictograph/petroglyph designs.

Later Indian occupation will be interpreted by means of an exhibit using the Peshlakai Atsidi family as an example of the Navajo people. This family has been associated with the monument area for nearly a century. Historic and modern photographs, silver, rugs, and other items can be displayed, accompanied by graphics and text. The subject may also be suitable for publications.

Lomaki Contact Station

A new building has been proposed in the General Management Plan, to be located at the junction of the main park road and the road to Lomaki ruin. Its primary function will be to house restrooms (replacing the pit toilets at Lomaki ruin) at a more convenient location for through traffic and at a place less intrusive on the resource. In addition, it will provide some orientation to the features of the area. Visitors entering from the north encounter several ruins before reaching the visitor center and consequently have orientation needs between the entrance and the visitor center that have been unmet in the past. This orientation will be a modest affair, perhaps several panels as part of a breeze-way or something similar.

Sunset Crater Visitor Center

The space dedicated to visitor use in this building consists of one room, about 960 square feet. The information desk and sales area occupy one wall, and windows/entry doors, part of another. As at Wupatki visitor center, the space available for other media is fairly limited and, therefore, the division of the story into the appropriate media is an important first step.

The waysides and interpretive trail can best handle interpretation of the volcanic features on-site. Exhibits will concentrate on topics that have objects associated with them--rocks, equipment like the seismograph, models--with some graphics and photographs to augment. Audiovisual means are the best to cover sequential material that has action involved, such as geology and particularly volcanism. Publications will take on parts of the story that are conveyed primarily by words and pictures, and are best equipped to supply depth to the story.

In the case of Sunset Crater NM, there will also be an additional site for interpretation that will help take some of the load off exhibits in the visitor center. That site is the proposed new contact station at the relocated base of the crater parking area (and in the old contact station in the interim). It will be described at more length in a following section.

To be more specific in the case of the visitor center, both exhibits and audiovisual are considered necessary media in the interpretation. But a better spatial arrangement of these two elements will be required in design of the new contents. The shape of the room will lend itself to partitioning to create an alcove, better separated from flow-through traffic. In this way the program can be somewhat longer and the sound spill more controlled than the current arrangement allows.

The AV program should be no more than five minutes in length with informal seating for ten people. It will be visitor activated. It should contain some actual eruption footage that demonstrates processes similar to those that occurred at Sunset Crater, Paricutin volcano in Mexico for example. In addition, as the processes are shown, the comparable feature at Sunset Crater would be juxtaposed. It would also be helpful to show from an aerial perspective the Sunset Crater region, which would serve to introduce the cinder cone type of volcanism and ages of related nearby volcanic manifestations. Finally, a short animated sequence will show how cinder cones build. Some of these elements already exist on film. They will need to be assembled with a new soundtrack and a little new footage added. With a small audience and a small alcove a video installation is probably still the best format.

In the remaining space not occupied by the AV alcove and the zone of heaviest traffic between the information desk, front doors, and sales display, exhibits will interpret volcanic geology. The human witnesses to the Sunset Crater events will be covered to a lesser degree and some sort of introduction to the Coconino National Forest in the form of an exhibit must be retained.

The seismograph will be retained along with several of the charts that record major recent seismic events. A part of this unit should be a brief explanation of the way the equipment works. This is also probably the best place to make the point that major volcanic events have occurred at regular intervals in the San Francisco Peaks area and that another one can be expected. The role of the seismograph in recording earth movements related to volcanic activity should be made clear and answer the question of why this equipment is displayed in the visitor center.

An ejecta exhibit serves a useful function in that the visitors can view all the various forms that have been assumed by products of the volcano. Each type needs to be briefly described and perhaps correlated with location or formation in the cycle of cinder cone creation.

Another exhibit topic is dating methods that have been used to determine the age of the Sunset Crater, including dendrochronology and paleomagnetism. This presentation should also provide the results of the dating efforts, thus giving a brief history of the sequence of eruptive activity.

There will be opportunities as well for large graphics and decorative elements that focus on the cinder cone itself and the surrounding volcanic field. Aerial photos may be useful.

An exhibit on the impact of the cinder cone eruption on the native inhabitants should clearly tie these two subjects together more successfully than the existing exhibit does. It was from discoveries of cinder covered pre-eruptive pithouses that the recency of the volcanic event was first suspected.

From the foregoing discussion, it is apparent that the new contents of this visitor center will not differ greatly in subject matter from the existing contents. The major changes that are needed are in the realm of design completeness and more coherent explanations of the basic concepts. The problems with sound spill and competition between AV and exhibits will be alleviated with the alcove arrangement described, perhaps best located in the far rear corner of the room from the front entrance doors.

With these improvements made, interpretation of the basic volcanic processes and concepts in the building should be sufficient to help visitors understand the significance of the resources they will encounter in their visit in the park.

Contact station at base of Sunset Crater
parking area

The site will be the place where a visitor can get the best close-up look at the cinder cone for which the park is named. At one time it was primarily the starting point for the trail to the top of the cone, but since the trail removal its function has altered. The present parking lot is slated for relocation. The old contact station will also be moved and used until funding is available to construct a new building. One of the results of this project will be to change the trailhead for the lava flow trail.

In addition to a new trailhead wayside exhibit described in more detail in the appendix, there will be some further interpretive media requirements at the site, mainly exhibits in or on the contact station. These exhibits will not include much, if anything, in the way of artifacts and will probably have more resemblance to waysides in design and construction. The building will probably be staffed only occasionally at the busiest season. At such times the hard hats with lights used to enter the ice cave safely and the battery recharging apparatus may be moved here from the visitor center for visitor convenience.

The exhibits at the building should cover several topics. An enlarged photograph is needed of the cinder cone. It should be angled to show the interior of the "crater" since the interest in climbing the cone came in part from seeing the inside of the depression at the top, perhaps in the mistaken expectation of seeing a vent. Along with this photo should go an explanation of the reasons why climbing is no longer permitted. Since the O'Leary bus trip alternative is subject to fluctuations in funding from year to year and is not a permanent feature, mention of it is better handled at the visitor center through personal services. A comparison of ages of

cones and rates of erosion of such features might be useful, employing older vegetated examples like Capulin Mountain and those cones of which only eroded roots still remain.

Features (3 or 4) of special interest in the vicinity might be treated in a quick, broadbrush fashion, concentrating on those that would be enhanced by graphics or photographs, like the ice cave. (In this connection, at the next revision of the trail folder a map should be added to show the cave configuration. Visitors are not likely to remember a map during the interval from the parking lot to their arrival at the cave itself.) Several visually striking flowering plants could be illustrated in color, selecting ones that perhaps grow best on cinders or in some way restricting the plants to those that are especially plentiful, interesting, or unusual in some way connected with the volcanic area.

PUBLICATIONS

A good selection of sales publications is offered by Southwest Parks and Monuments Association outlets in both visitor centers. A total of more than fifty items covers geology, natural history, archeology and anthropology subject matter in addition to maps, charts, and postcards. No unfilled niches were discovered in the selection.

Trail guides are available for three trails: Wupatki Ruins, Nalakihiu-Citadel, and Lava Flow. They serve a useful purpose in that not only do they provide information on-site, but are good as a carry-home souvenir to be consulted later. The trail guides also diminish the need to install wayside exhibits that sometimes can detract from the setting of a feature. The guide for Lava Flow Trail will need revision to correspond with the new trailhead location.

The park folder is scheduled for revision, to be converted to the new unigrid format.

At the time the archeology survey is completed, a publication containing the results might be considered, perhaps as a proceedings of a resulting symposium. If published in large enough press runs, copies can be offered for sale at Wupatki. It could also provide the basis for a high-quality semi-popular account of the prehistory that could be sold at a lower price, appealing to a wider audience.

Some mention might be made in publications, perhaps in the park folder, of the relationship of the Walnut Canyon story to Sunset Crater/Wupatki.

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; the elderly and young children; and visitors who do not speak English.

Accommodations will be made for access to the sites as well as to 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 are ones that 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.

Public Law 90-480, the Architectural Barriers Act, establishes certain standards for physical access. Both visitor centers are accessible and the new contact stations will, as a matter of course, be designed for accessibility for the physically handicapped. The trail to Wupatki ruin is in the process of being made suitable for wheelchair access. Some other trails are hard-surfaced and reasonably level.

The video programs that have been proposed will be closed-captioned for the deaf and hard-of-hearing visitors. An existing model of Sunset Crater cinder cone, although suffering from some design defects, provides a tactile exhibit that helps visually impaired visitors get a feel for the shape of the feature. It will be redone to improve the likeness to the cone.

The park staff may wish to consider the need to put the park folder information or trail guides on cassette tapes.

Some consideration has also been given to translation of basic information into languages other than English. A portion of the visitors to Wupatki-Sunset Crater is shared with Grand Canyon National Park,

and the latter is a magnet for international tourism. Accordingly, there is a greater than average need for park information in French, German, Dutch, Japanese, and Spanish. The latter is currently available at the visitor center.

Some consideration should be given to better service for local non-English-speaking Indian visitors. For instance, tape cassettes might be produced in Navajo for those who speak but do not read that language.

The park staff has been involved with environmental education programs of local school districts and has developed pre-visit materials for groups. Several sale publications are intended for young children.

RESEARCH NEEDED

The General Management Plan recommends a number of research projects to be accomplished. Many will ultimately benefit interpretation by increasing the information base. This is true of such studies as: an investigation of paleoenvironmental conditions, compilation of a master inventory of artifacts that were excavated at Wupatki and now are distributed to various depositories, analysis of ballcourt artifacts, ethnographic studies, and a vegetation analysis.

The Interpretive Prospectus proposal for new exhibits at the Wupatki visitor center should not be implemented until the archeological survey now underway is completed. It has two more seasons of field work to go in the five-year period.

No additional studies were identified during the interpretive planning process. However, a visitor use survey might shed some light on visitor characteristics that would benefit park management.

GROSS*
COST ESTIMATES

		<u>Planning</u>	<u>Production</u>	<u>Equipme:</u>
Page				
<u>Reference</u>	<u>Waysides, parkwide</u>			
12 and Appendix	Total of 14 locations	\$ 15,000	\$ 60,000	
	<u>Exhibits</u>			
15-18	Sunset Crater Visitor Center	\$ 30,000	\$114,000	
13-15	Wupatki Visitor Center	\$ 21,000	\$ 84,000	
15	Lomaki Contact Station	\$ 1,800	\$ 7,200	
18-19	Base of crater contact station	\$ 2,400	\$ 9,600	
	<u>Audiovisual</u>			
16	New video program for Sunset Crater	-	\$ 15,000	-
14	New video program for Wupatki	\$ 3,000	\$ 15,000	\$15,000

*If funded through HFC Major Rehab Program, reduce these figures by 1/3.

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Harpers Ferry Center

Other staff members of Sunset Crater and
Wupatki National Monuments

APPENDIX

Wayside Exhibit Proposals

Exhibit 1

Location: Entrance to Sunset Crater NM at Highway 89 intersection

Subject: Orientation - visiting the two national monuments, with emphasis on Sunset Crater

Description: A schematic map is needed to show the entire loop road and Highway 89. It should be oriented correctly and show distances. Visitors will be oriented to the features and significance of the national monuments. As a way of focusing on the human witnesses to the Sunset Crater volcanic events, the adjacent pithouses could be treated as a secondary topic. This approach will also extend a natural invitation to continuing the loop road to Wupatki for more information about the prehistoric peoples and the remnants that are left from their occupation. This wayside must be designed carefully so that visitors are aware that the first points of interest are related to volcanics and the introduction of prehistoric peoples at this point does not create confusion. The exhibit will be located on Forest Service land and could also contain some USFS information.

Exhibit 2

Location: Bonito Park at new pullout

Subject: An introduction to the major volcanic features in view as a part of the San Francisco Peaks volcanic field

Description: At this location there is an excellent view of the San Francisco Peaks and of Sunset Crater. This exhibit will set the stage for continuing to travel the park road to the visitor center and ultimately to the cinder cone itself.

Exhibit 3

Location: Bonito lava flow pullout

Subject: The lava flow in relation to other crater volcanic events

Description: The lava flow erupted at the base of the crater. Its point of origin, direction and extent of flow, and age need interpretation through graphics and text.

Exhibit 4

Location: New parking area at base of crater - trailhead for Lava Flow Nature Trail

Subject: Trail information

Description: Visitors need to know the time, distance, and route involved in hiking this trail. Major features such as the ice cave should be identified. The map might consist of a photo of the area on which the trail route is superimposed. The map should be correctly oriented.

Exhibit 5

Location: Overlook on short spur trail off Lava Flow Nature Trail (at base of Sunset Crater)

Subject: Geology

Description: This wayside should identify volcanic elements of the scene in view. Possibly the geological sequence of events and dates of various activity should be included. The spur will be aimed at those visitors who will not go the whole distance on the trail but will turn back after the viewpoint.

Exhibit 6

Location: Cinder Hills Overlook

Subject: Geology

Description: The feature to be interpreted is the faultline with spatter cones aligned along it.

Exhibit 7

Location: Painted Desert Vista

Subject: The scenery in view, with a lighter treatment of plant communities associated with specific elevations

Description: The painted desert is the most obvious component of the distant scenery. Visitors should understand the extent, significance and features of the desert.

This viewpoint is located at the higher elevations typical of Sunset Crater NM. Proceeding northward towards Wupatki, the elevation decreases and is characterized by different vegetation. The change can be seen from the viewpoint. Along the loop road one passes through ponderosa pine communities, pinyon-juniper, and the desert scrub. (This wayside will be supplemented by park-produced routed signs along the loop road identifying the community and the elevation.)

Exhibit 8

Location: Heiser pithouse parking area

Subject: (1) Orientation, (2) Geology

Description: Since the pithouses have been backfilled and cannot be seen, they will not be interpreted. At such time as they can be stabilized and a trail installed to take visitors to see the site, an additional wayside could be installed to interpret the pithouses.

For now, interpretation will be restricted to the two subjects listed. The parking area is near the south boundary of Wupatki NM. Visitors going south to Sunset Crater should be oriented to the important features of the national monument. Visitors traveling north from Sunset Crater need orientation to the features of Wupatki, especially the locations of the major ruins along the loop road.

The geology of the Wupatki Basin should also be interpreted, especially those features nearby and in view: the sequence of lava flows, Black Point, the Little Colorado River.

Exhibit 9

Location: New parking area at Wukoki Ruin

Subject: Wukoki Ruin

Description: This exhibit will serve as a trailhead marker, directing visitors on the new trail to the ruin, identifying the structure and providing information about it.

Secondarily, another topic of interest should be selected and developed at this and each of the other ruins that has a wayside exhibit. The topic at Wukoki might be something like living with the volcano because of the excellent view of Sunset Crater from here.

Exhibit 10

Location: Overlook behind visitor center at Wupatki

Subject: Wupatki Ruin

Description: After leaving the visitor center, the visitors proceed along the pathway to the ruin. At a point just before the trail slopes down to the ruin, there is an overlook from which the whole settlement is visible. Some visitors go no further than this. For them the wayside will identify the various elements of the ruin. (A trail guide is provided for people who do continue.)

Exhibit 11

Location: Doney picnic area overlook

Subject: Geology

Description: The overlook will be used by picnickers who stroll across the road before or after eating. The scenery in view includes cinder cones aligned along a fault. Although the fault is not visible from this point, an aerial oblique photo or illustration could show it, as well as pointing out the viewer's location on the formation.

Exhibit 12

Location: Relocated parking area at Lomaki Ruin

Subject: Lomaki Ruin

Description: As at Wukoki, this exhibit will function as a trailhead wayside, directing visitors to the ruin and providing some information.

Again, a topic of special interest should be developed, such as trade routes and objects associated with trade (without using actual objects).

Exhibit 13

Location: Trailhead at Citadel-Nalakihu Ruin

Subject: The ruins

Description: The wayside is needed to introduce the ruins. Since it is known from archeological research that there were many other inhabited structures nearby, including field houses, an artist's conception of the environs might be used. The artwork could show many nearby structures and the Citadel and Nalakihu as they might have looked when inhabited. The intent is to dispel the feeling that these two ruins were alone in a silent valley.

The topic of special interest that is developed additionally might be farming because of the terraces that are still evident.

Exhibit 14

Location: North entrance to Wupatki NM, at Highway 89 intersection

Subject: Orientation - visiting the two monuments along the loop road, with emphasis on Wupatki NM

Description: A schematic map is needed to show the entire loop road and Highway 89. It should be oriented correctly and show distances. Visitors will be oriented to the features and significance of the national monuments. It is especially important to provide photos of the ruins or through some device interest the visitor in continuing on toward Wupatki. The pullout near the highway intersection is an area seemingly devoid of life with no ruins or visitor center visible. Visitors need to know what their options are and how much time is involved. Lacking such information many are not inclined to venture off the main highway for such a side trip.



United States Department of the Interior

NATIONAL PARK SERVICE

SOUTHWEST REGION

P.O. Box 728

Santa Fe, New Mexico 87501

DEC 5, 1983

IN REPLY REFER TO:

K1817(SWR-OIV)

DEC 2 1983

Memorandum

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

From: Regional Director, Southwest Region

Subject: Approval of Draft Interpretive Prospectus for
Wupatki/Sunset Crater

The draft Interpretive Prospectus for Wupatki/Sunset Crater, submitted for review on September 29 is hereby approved by this Office subject to consideration of the comments made in our memorandum of November 9.

cc:
Superintendent, Wupatki/Sunset Crater