Navajo National Monument

Arizona

National Park Service
U.S. Department of the Interior

Draft General Management Plan - Environmental Impact Statement

Navajo National Monument

Navajo County, Arizona

This *Draft General Management Plan/Environmental Impact Statement* describes and analyzes a proposed action and two alternatives for managing and using Navajo National Monument. The plan is intended to provide a foundation to help park managers guide programs and set priorities for resource stewardship, visitor understanding, partnerships, facilities, and operations. The alternative that is finally chosen as the plan will guide management of the monument for the next 15–20 years.

The central questions of the plan are how resources will be protected for future generations, how visitor understanding will be improved, how associated American Indian tribes will be more fully recognized and involved with the monument, and what facilities, staff, and funding will be needed to fulfill the plan.

Alternative A: (No Action) The National Park Service would continue existing management practices, resulting in current resource conditions and visitor experiences and the logical progression of known trends over time. It is required as a baseline against which the other alternatives can be compared.

Alternative B: Focus on NPS Land The National Park Service would focus management on the existing land base to achieve the purposes of the monument. Primary resource protection and visitor understanding would be accomplished on the three federal units at Betatakin, Keet Seel, and Inscription House. Improvements to resource protection would be made with additional NPS ranger patrol staff and ranger stations. Visitor understanding would be improved with a larger visitor center, more trails and overlooks, and more outdoor exhibits and interpretive rangers on the mesa top at Betatakin.

Alternative C–Emphasize Partnerships (Preferred) The National Park Service would carefully manage the existing land base and in addition would share common goals with American Indian tribes and others to protect resources and promote visitor understanding of the entire region. The NPS would look beyond the boundary for accomplishing joint purposes through cooperation and partnerships. Opportunities for more innovative and diverse programs, education and outreach, cross training, and broader resource management would be greatly enhanced by a collaborative regional effort.

This document also discusses the potential consequences of each alternative's actions on cultural and natural resources, visitor experience and understanding, remoteness, socio-economics, and monument operations. Alternative A would provide adequate protection of natural and cultural resources and remoteness and contribute to the local economy, but would continue to see adverse effects on visitor understanding and monument operations. Alternative B would improve all of these areas, with greatest benefits to visitor understanding and monument operations. Alternative C would be similar to Alternative B, but with stronger protection of resources and remoteness, owing to proactive partnerships that would address resource protection comprehensively. Alternative C also offers the greatest opportunity for broadening visitor understanding through partnerships with associated American Indian tribes.

For questions, concerns, or comments about this document, contact Superintendent James Charles at Navajo National Monument, HC 71, Box 3, Tonalea, AZ 86044-9704, phone (520) 672-2700, or on the web at http://www.nps.gov/planning/nava.

PURPOSE OF THE PLAN

This *Draft General Management Plan/Environmental Impact Statement* describes and analyzes a proposed action and two alternatives for managing and using Navajo National Monument. The plan is intended to provide a foundation to help park managers guide programs and set priorities for resource stewardship, visitor understanding, partnerships, facilities and operations. The alternative that is finally chosen as the plan will guide management of the monument for the next 15–20 years.

CENTRAL QUESTIONS OF THE PLAN

The central questions of the plan are:

- **Resource Stewardship**. How will resources be protected for future generations? Unauthorized access and vandalism threaten destruction of the cliff dwellings. Pressure for more access may threaten resources. Artifacts in museum storage need better protection, and there are American Indian concerns about repatriation. Activities on adjacent land affect resources and remoteness.
- **Visitor Understanding**. How will visitor understanding be improved? What messages should visitors leave the monument with? Opportunities to more broadly interpret cultures are being missed. How much access should be provided to the cliff dwellings? What opportunities are there for visitors who do not go to the cliff dwellings? Opportunities for youth and for people with disabilities are very limited at the present time.
- **Partnerships**. How will associated American Indian tribes be more fully recognized and involved with the monument? Can local interest in economic development find common goals with the monument? How can communication with tribes be improved?
- **Facilities and Operations**. What facilities, staff, and funding will be needed to fulfill the plan? Local staff is extremely valuable and needs to be recruited and retained. Recruitment from other tribes is needed.

PREFERRED ALTERNATIVE C– EMPHASIZE PARTNERSHIPS

The National Park Service would carefully manage the existing land base and in addition would share common goals with American Indian tribes and others to protect resources and promote visitor understanding of the entire region. The NPS would look beyond the boundary for accomplishing joint purposes through cooperation and partnerships. Opportunities for more innovative and diverse programs, education and outreach, cross training, and broader resource management would be greatly enhanced by a collaborative regional effort.

Resource Stewardship

CULTURAL RESOURCES

- Protect for future generations
- Consult with tribes
- Repatriate appropriate artifacts through NAGPRA

- Increase NPS ranger patrol prevent vandalism, provide interpretation, and monitor resource conditions
- Seek agreements and partnerships to prevent vandalism
- Improve on-site care and storage of artifacts, provide holding space for some tribal artifacts, and consolidate most of collection at a regional curatorial facility

NATURAL RESOURCES

- Enable natural systems, promote native species, protect threatened and endangered species, encourage appropriate scientific research
- Increase NPS natural resource staff and partnerships to accomplish goals

ETHNOGRAPHIC RESOURCES

- Continue access for traditional cultural use by associated tribes within law and policy

Visitor Experience and Understanding

FRONT COUNTRY

- Access for traditional cultural purposes will continue through the issuance of special use permits where necessary
- Remodel visitor center, new exhibits and AV, expand rim trails, improve opportunities for people with disabilities, expand opportunities for youth
- Involve tribes in interpretive programs, skills demonstrations, special events
- Maintain camping and picnicking, improve accessibility

BACKCOUNTRY

- Protect remoteness with new backcountry management plan and by developing partnerships to ensure complementary activities and development around monument
- Betatakin
  - –Offer more guided tours per day (NPS or partner)
  - –Extend season
  - –Continue access via Tsegi Point for foreseeable future; reopening Aspen Forest Trail may be considered in the future, but will require further study of safety and environmental analysis of potential impacts.
- Keet Seel
  - –Extend season for permits
  - –Continue primitive campground outside of monument
  - –Continue limited access within alcove, subject to further study in the backcountry management plan
- Inscription House
  - –Seek agreements to allow limited tours by NPS or partners

Partnerships

- Consult regularly with individual associated tribes, government to government
- Establish an American Indian consultation committee
- Seek agreements with tribes and others, such as student interns and universities, for a wide variety of activities including resource protection, guided tours, educational outreach, research, craft demonstrations, etc.

Facilities and Operations

FACILITIES

- Remodel VC (5,000 SF), add new exhibits, and AV programs
- Increase front country trails (to 4 miles)
- Maintain campground, picnic area
- Build a ranger station at Inscription House
- Keet Seel campground remains outside boundary
- Build new administration building (3,200 SF)
- Build curatorial storage (2,000 SF)
- Expand maintenance with fire cache, four shop bays, covered parking
- Expand NPS housing with a duplex and 4-plex, plus trailer pads for volunteers, researchers
- Rehabilitate utilities

BOUNDARY MODIFICATION

- Seek transfer of headquarters unit (240 AC) from Navajo Nation to NPS
- Seek agreements or conservation easements for protection of adjacent cultural resources, ensure access for visitors and administration, and provide a buffer

STAFF

- Continue to recruit and hire local employees and provide training and incentives for them to remain
- When filling new additional positions, seek to supplement staff with qualified Hopi, Zuni, and San Juan Paiute tribal members and recruit diverse student interns, partners, volunteers
- Sixteen total permanent (including new law enforcement ranger, management assistant to develop partnerships, resource manager, preservation specialist, curator)
- Fifteen to seventeen seasonals

ESTIMATED COSTS

- Annual Operating Cost—$1,190,000
- Total Capital Cost—Net Construction—$6.1 million
- Land Protection Cost—purchase or exchange of headquarters unit, conservation easements

OTHER ALTERNATIVES CONSIDERED

Alternative A: (No Action)

This alternative would continue existing management practices, resulting in current resource conditions and visitor experiences and the logical progression of known trends over time. It is required as a baseline against which the other alternatives can be compared.

Alternative B: Focus on NPS Land

The National Park Service would focus management on the existing land base to achieve the purposes of the monument. Primary resource protection and visitor understanding would be accomplished on the three federal units at Betatakin, Keet Seel, and Inscription House. Improvements to resource protection would be made with additional NPS ranger patrol staff and ranger stations. Visitor understanding would be improved with an expanded visitor center, more access with interpretive trails and overlooks, and more outdoor exhibits and interpretive rangers on the mesa top at Betatakin. The NPS would continue to work cooperatively with the Navajo

Nation for maintaining trail access from the NPS headquarters area to Betatakin and Keet Seel.

ENVIRONMENTAL CONSEQUENCES

This document also discusses the potential consequences of each alternative's actions on cultural resources, natural resources, visitor experience and understanding, remoteness, socio-economic environment, and park operations.

Impacts of Alternative A: (No Action)

In general, the overall protection of cultural resources would be adequate from maintenance stabilization, careful management of visitors, and ranger patrol. Moderate, long-term impacts to cultural resources from natural rockfall, arroyo erosion, raptors, rodents, traffic vibrations, visitors off of trails, and grazing would continue. Most of the museum collection would continue to be adequately protected at off-site facilities, but moderate long-term adverse effects would result from lack of storage and staff to protect artifacts on site. Ongoing construction projects would have adverse effects on archeological resources, but they would be mitigated.

Ethnographic resources would have beneficial effects from ongoing relationships between tribes and monument staff. Visitors could occasionally have moderate adverse effects on ethnographic resources.

Grazing and trampling on adjacent land would continue to have moderate adverse effects on water quality, wetlands, vegetation, wildlife, soils, and species of concern. Ongoing arroyo erosion and drop in the water table would also adversely affect these resources. Hikers have minor, short-term adverse effects on vegetation, wildlife, and species of concern, and can cause soil erosion when they are off of designated trails. Ongoing construction projects would have localized moderate adverse effects on natural resources.

Noise from visitors, vehicles, and ongoing construction would continue to have minor short-term adverse impacts at the Headquarters area, and to a lesser degree in Betatakin Canyon. Adjacent land uses would have minor, long-term adverse effects on lightscapes and scenic vistas; future development could intensify these effects to moderately adverse.

Visitor experience and understanding would continue to have moderate, long-term adverse effects from outdated exhibits, lack of interpretation of other cultures, limited access, and inadequate facilities for people with disabilities.

The monument does provide beneficial, moderate long-term effects from jobs and money multiplied through the economy from visitors, monument operations, and ongoing construction operations.

Monument operations would continue to have moderate adverse effects as a result of inadequate employee housing, office space, utilities, communications systems, and fire protection, and limited police protection.

Impacts of Alternative B: Focus on NPS Land

Overall protection of cultural resources would be similar to what would be expected under Alternative A. Greater construction and visitor activity on the rim would have moderate adverse effects on archeological and natural resources, but this would be offset by the beneficial effect of more well-defined trails that would encourage visitors to stay on the trails. Adverse effects on archeological resources would be mitigated. The cliff dwellings of Betatakin and Keet Seel would have moderate beneficial impacts as a combined

result of increased season of use and increased ranger patrol. Inscription House cliff dwellings would have major beneficial effects from greater ranger presence. Protection of artifacts in the museum collection at the monument would have moderate beneficial impacts, resulting from the addition of an improved storage area, lab facilities, and additional staff.

Greater visitor understanding would benefit protection of cliff dwellings, archeological sites, and ethnographic resources. A longer season of visitor use to Betatakin and Keet Seel and tours to Inscription House would have moderate, short-term adverse effects on ethnographic resources, vegetation, wildlife, and species of concern. These could be mitigated by consultation and scheduling.

Greater communication with the Navajo Nation regarding grazing and other activities on adjacent land through the consultation committee would have moderate beneficial impacts to natural and cultural resources. Additional staff trained in natural resource management would provide moderate beneficial impacts.

Visitors on new rim trails and more visitors into Betatakin would cause minor, short-term adverse levels of noise on the rim in Betatakin Canyon, but this would be offset by more opportunities for visitors to experience remoteness. Additional facilities on the rim would cause minor adverse effects on scenic vistas, but would be mitigated through design.

Visitor experience and understanding would be greatly improved—moderate long-term benefits would be the result of an expanded and improved visitor center, trails, increased backcountry opportunities, and opportunities for people with disabilities. Monument operations would similarly have moderate long-term benefits from having adequate staff and facilities as well as a secure land base at headquarters.

Beneficial, moderate long-term effects from jobs and money multiplied through the economy from visitors, monument operations, and ongoing construction would be similar to those expected under Alternative A, although under Alternative B, effects would be slightly increased because visitors would be staying longer—owing to improvements—and spending more, there would be more jobs at the monument, and there would be more construction activity. There would be a moderate short-term adverse effect from the transfer of the headquarters parcel from the Navajo Nation to the NPS.

Impacts of Alternative C—Emphasize Partnerships (Preferred)

Impacts would be very similar in all areas to those identified under Alternative B, with differences largely stemming from the emphasis on partnerships. There would be opportunities to have greater beneficial impacts on cultural, ethnographic, and natural resources through partnerships, consultation, and collaborative management with tribes, conservation easements, and expanded research and additional volunteers from universities and elsewhere. Visitor understanding would be greatly enhanced by involving American Indian tribes in the development of different interpretive perspectives and through their direct involvement in interpretive programs. Encouragement of local guided tours would cause moderate adverse impacts to natural and cultural resources from horses and/or vehicles, but this would be mitigated through consultation and coordination. Opportunities to work toward mutual goals would provide moderate benefits to protecting natural quiet, lightscapes,

and scenic vistas on adjacent land. Monument operations would realize a moderate benefit from improved police protection resulting from cooperative agreements with neighboring law enforcement jurisdictions as well as realizing moderate benefits from extending the work of park staff through the increase in numbers of volunteers.

ENVIRONMENTALLY PREFERRED—ALTERNATIVE C

Alternative C offers the strongest protection of resources and remoteness because it would proactively work with partners to address resource protection comprehensively. Alternative C also offers the greatest opportunity for broadening visitor understanding through partnerships with associated American Indian tribes.

SELECTION OF ALTERNATIVE C—EMPHASIZE PARTNERSHIPS—AS THE PREFERRED ALTERNATIVE

- Proactive, holistic, sustainable approach to resource protection
- Understanding through connections
- Environmentally preferred
- Best protection and scientific value for museum collection
- Local jobs
- Support by associated American Indian tribes

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PURPOSE AND NEED FOR A GENERAL MANAGEMENT PLAN

The purpose of the General Management Plan (GMP) is to map out a clear direction for the management of Navajo National Monument for the next 15 to 20 years. The GMP will provide comprehensive and integrated guidance for the preservation of resources, provision of visitor enjoyment, and the organizational mechanism to accomplish the plan. The plan will not provide specific and detailed answers to every issue or question facing Navajo National Monument, but the approved plan will provide a comprehensive framework for proactive decision making. General management plans are required for every unit of the National Park Service and must address resource protection measures, general development locations, timing, costs, carrying capacity analyses, and boundary modifications. One of the most important aspects of planning is public involvement. Creation of the GMP is a process that involves interaction with other government agencies, American Indian tribes, neighbors, visitors, and the general public.

Navajo National Monument has never had a general management plan. Visitation remained below 1,000 per year until 1950. A master plan, developed in 1951, guided development of the visitor center, parking, picnic area, campground, trails, and overlooks that were constructed in the early 1960s. Completion of these facilities, coupled with the paving of the Kayenta–Tuba City road, led to visitation climbing from around 1,000 per year to approximately 80,000 per year. Charged with protecting resources and enhancing visitor understanding in the 21st century, the National Park Service needs a comprehensive framework that guides management decisions and lets the public know how and why the monument is managed the way it is.

This *Draft General Management Plan/Environmental Impact Statement* was developed through public scoping, newsletters, public comments, and tribal consultation. It will have a 60-day public review comment period, during which time, the National Park Service will provide opportunities for the public to comment on the draft. After the comment period ends, the planning team will review comments on the draft document, make appropriate revisions, modify various elements of the preferred and other alternatives, and prepare a final general management plan/environmental impact statement. The final document will include responses to substantive comments on the draft document. A minimum of 30 days after the final plan is published, the National Park Service will publish a record of decision in the *Federal Register,* and the plan will then be implemented.

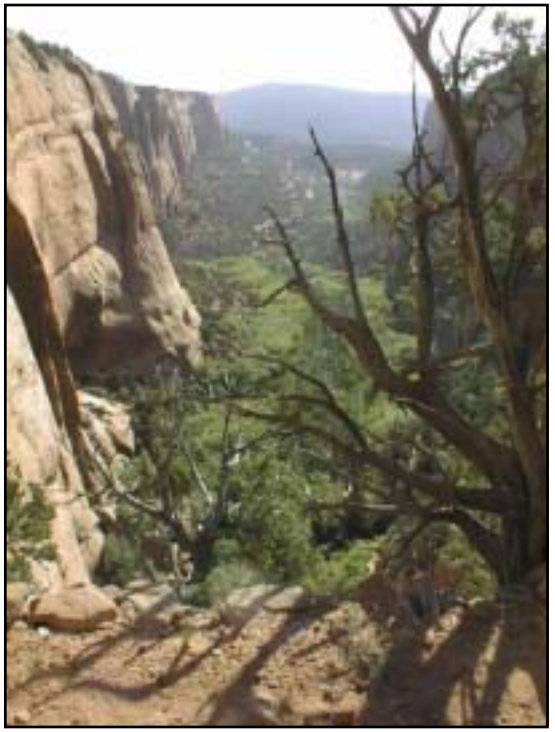
One of the most important aspects of planning is public involvement. The GMP is a process that involves interaction with other government agencies, American Indian tribes, neighbors, visitors, and the general public.

VISION

The images are undeniably compelling: red sandstone canyons; amazingly large cliff dwellings; astonishingly preserved building details and remnants that tell about this ancient 13th-century Puebloan society; the lush forest of Betatakin Canyon; waterfalls tumbling over sandstone near Keet Seel; remoteness, wide blue skies, quiet; the land of the ancestral home of the Hopi, Navajo, San Juan Paiute, and Zuni. In contrast to the busy sameness of modern urban life, the ancient villages of Navajo National Monument are tied to and surrounded by native cultures, including those that descended from the village builders.

Navajo National Monument has been a remote place since its establishment in 1909. The few early hardy visitors braved the vast distances on horseback from the railheads at Flagstaff, Arizona, or Dolores, Colorado. Only recently did paved roads make the area more accessible, although access is still difficult. Betatakin is a five-hour hike, Keet Seel is an arduous overnight backcountry trip, and Inscription House is so fragile and isolated it remains closed. The challenge and commitment required to go to Betatakin and Keet Seel rewards visitors with an unparalleled experience. Remoteness has protected what is special about the monument—intact cliff dwellings linked to natural settings, a lack of modern intrusions that fosters a deep understanding of the past, a landscape connecting past and present cultures, and a region central to the spiritual beliefs of Hopi, Navajo, San Juan Paiute, and Zuni Tribes.

The Navajo National Monument of the future should look a lot like the Navajo National Monument of today. In the spectrum of units of the national park system, this monument should guard its unique remoteness and the special understanding that comes from the wholeness of the



landscape. The ancient village sites and their natural settings should be protected to evoke a strong sense of the past and respect of cultural beliefs. The monument should provide a quiet, insightful experience. Improvements to programs and facilities should be made to provide greater understanding and appreciation for those who cannot or choose not to hike to the remote sites, but such improvements should not interfere with the mission of the monument. As pressures of urbanization and tourism increase, Navajo National Monument should stand out as a window into distinct past and present cultures. The nation will increasingly need such places in the future.

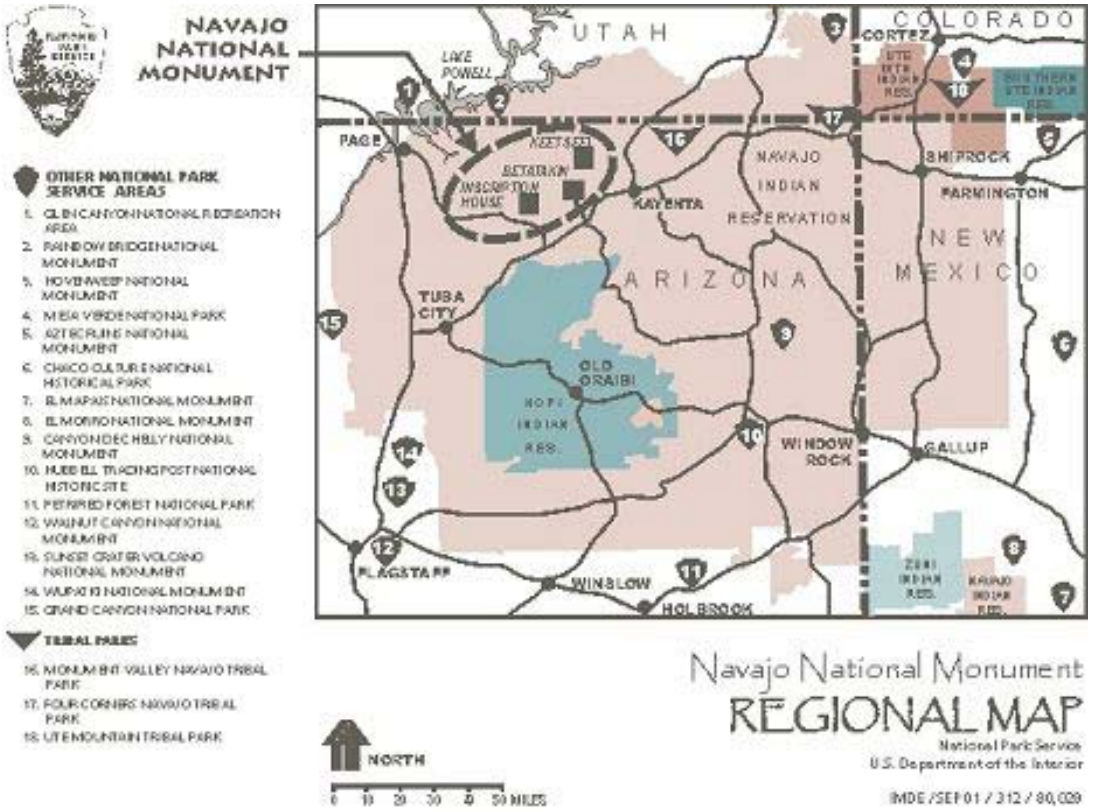
BRIEF DESCRIPTION AND LOCATION

Navajo National Monument was established to preserve three specific outstanding 13th-century cliff dwellings in Northern Arizona. Betatakin, Keet Seel, and Inscription House are some of the largest, most intact Anasazi structures in the Southwestern United States. These three sites represent one part of a long human habitation of the area and hold distinct meanings to different people, particularly the Hopi, Navajo, San Juan Paiute, and Zuni. The National Park Service manages these sites to protect their natural and cultural heritage for present and future generations.

The cliff dwellings lie on three very small tracts (360 acres total) of federal land, separated by considerable distance and surrounded by Navajo Nation land in northeastern Arizona. The town of Kayenta is about 30 miles east of the monument on U.S. Highway 160, a main route between the Four Corners areas and the Grand Canyon.

The Betatakin unit, 160 acres, is adjacent to the headquarters area, which resides on about 240 acres of land under agreement with the Navajo Nation. About 9 miles north of U.S. Highway 160, this is the primary visitor area with a visitor center, trails, overlooks, a campground, a picnic area, and administrative facilities. Betatakin is visible from the overlook on the rim, and visitors can gain access from a 5-mile roundtrip guided hike into the canyon. Keet Seel unit, 160 acres, is 8 miles northeast of headquarters, and visitors must generally backpack overnight to visit it. Inscription House, 40 acres, is more than 30 miles by road from headquarters and has been closed to visitors since 1968. Access requires travel through Navajo Nation land.

Current visitation to Navajo National Monument is about 66,000 per year, and more than 95 percent of visitors stay on the rim at the headquarters area. Remoteness has been key to protecting the resources of these small sites set within the Navajo Nation.



THE HOPI, NAVAJO, SAN JUAN PAIUTE, AND ZUNI, AND THEIR RELATIONSHIP TO NAVAJO NATIONAL MONUMENT

Four American Indian tribes have been identified through consultation as having cultural associations with the area of Navajo National Monument. Each has a distinct set of beliefs and a relationship with the sites, geography, and landscapes of the monument.

Hopi

Ancestors of the Hopi have lived in the Southwest for millennia. Hopi origin stories tell of their ancestors, the Hisatsinom, coming into the present world through the Sipapu, the center of the cosmos, from which their ancestors emerged from the underworld and spread throughout the Southwest.

From the 10th to 13th centuries, as trade brought seeds of corn and other agricultural crops into the region from present-day Mexico, Hisatsinom lifeways changed from nomadic hunting and gathering to farming the red-rock mesas and canyon bottomlands. Settling into farming, the Hisatsinom replaced their temporary brush shelters with enduring multistoried, stone and masonry houses clustered in villages.

The Hisatsinom inhabited the lands of present-day Navajo National Monument from about A.D. 950 to A.D. 1300. During the early 14th century they migrated south, the result, perhaps, of a combination of factors—prolonged drought, erosion, deforestation, and overpopulation. However, these lands remain very important to the Hopi. Navajo National Monument is part of Kawestima, or North Village, the ancestral home of the Hopi clans that migrated through the area. Keet Seel (also Kawestima) is a Fire Clan village. Betatakin (Talastima) is a Flute and Deer Clan village. Inscription House (Tsu'ovi) is a Rattlesnake, Sand, and Lizard Clan village.

The Hopi value the archeological sites, structures, petroglyphs, and pictographs of Navajo National Monument, because they are a vital spiritual and physical link between the past, the present, and the future. Possessing a rich interpretive scheme for assigning meaning to images appearing on rock, the Hopi have identified symbols for living clans on a site in Betatakin Canyon. These sites and other sites are still considered sacred and active in a spiritual sense.

Navajo

The boundaries of the traditional Navajo homeland is symbolized by four sacred mountains: Blanca Peak (Sis Naajinii) near Alamosa, Colorado; Mount Taylor (Tsoo Dzil) near Grants, New Mexico; the San Francisco Peaks (Dook'o'oosliid) near Flagstaff, Arizona; and the La Plata Mountains (Dibe Ntasaa) near Durango, Colorado. Navajo origin stories tell of their ancestors, the Diné (people), emerging from a subterranean world into this world, located within the embrace of the four sacred mountains.

Archeological and linguistic evidence suggests that the Athabaskan-speaking Diné migrated south from the northwestern part of the continent. Archeologists have no consensus as to when the Diné arrived in the present-day Southwest, but estimate sometime between the 11th to 15th centuries. The Diné eventually diverged from hunting and gathering lifeways and adopted an agricultural lifestyle. Later, the Spanish introduced domesticated animals to the Diné, and sheepherding became central to their livelihood.

In 1868 Navajo tribal leaders signed a treaty with the United States, granting the tribe the reservation, eventually totaling more than 16 million acres and covering parts of three states—northeastern Arizona, northwestern New Mexico, and southeastern Utah. The reservation encompasses Navajo National Monument, which was created by presidential proclamation in 1909. As related through their oral history, the Navajo have a long tradition of using the monument and adjacent lands for both sacred and personal purposes, such as the harvesting of nuts and berries.

San Juan Paiute

Today, the San Juan Paiute live in small towns in and around the vast Navajo Nation. Several centuries ago the San Juan Paiute actually inhabited areas that are now managed by Navajo National Monument. In the mid-1850s Captain Walker and his troop traveled through much of what we now call the Navajo Nation. During his travels he came across a people, the San Juan Paiute, who settled in sparse camps along drainages in the Tsegi Canyon system. One group that he encountered lived in what is now called Nitsin Canyon. Most likely these people had settled some time after the inhabitants of Inscription House had been removed to other villages. This small band of San Juan Paiute eventually gave way to the ever-growing numbers and expansion of the Navajo, moving closer to Navajo Mountain and other areas where they continued their strategy of hunting and gathering and limited agriculture to gain food and materials for survival. The San Juan Paiute still feel a strong connection to Nitsin Canyon and other areas in the region.

Zuni

The Zuni have also lived in the Southwest for many centuries. Today, their home is near Gallup, New Mexico, however, at one time their settlements could be found in the Four Corners region of Colorado, New Mexico, Utah, and Arizona. The Zuni consider the area in which Navajo National Monument is located, Tsegi Canyon, to be an essential part of their traditions. The Tsegi Canyon region is known in their traditions as the "northern canyons," from which several of their clans originated and eventually migrated to their present location at Zuni Pueblo in New Mexico. The Zuni also see this region as important, since it was through Tsegi Canyon that they traveled to eventually reach what is now known as the Grand Canyon. The Zuni traveled through this region to visit areas that they had previously inhabited and to obtain salt from mines located near the Grand Canyon. Today, Zuni elders still travel to Navajo National Monument to visit Betatakin, because this site figures prominently in their past. Navajo National Monument still plays an important role in Zuni songs, traditions, and lives.

HOW THE MONUMENT WAS ESTABLISHED

The canyons branching deep into the Navajo sandstone of the Colorado Plateau have been inhabited for thousands of years. Among the evidence of past people are large, intact cliff dwellings, ceramics, tools, and other artifacts. In the late 19th century, these highly visible remnants of important cultural heritage were in danger of being looted and destroyed. In response to increasing public awareness of conservation and concern to preserve prehistory, the "Antiquities Act" became law in 1906. It established penalties for looting archeological sites on federal lands, established a permit system for gathering objects on federal lands, and

gave presidential authority to designate national monuments.

In 1909, President William H. Taft set aside Navajo National Monument (Proclamation No. 873, 36 Stat. 2491) as an area situated on the Navajo Indian Reservation in Arizona encompassing about 160 square miles:

> *"Whereas, a number of prehistoric cliff dwelling and pueblo ruins, situated within the Navajo Indian Reservation, Arizona, and which are new to science and wholly unexplored, and because of their isolation and size are of the very greatest ethnological, scientific, and educational interest, and it appears the public interest would be promoted by reserving these extraordinary ruins of an unknown people, with as much land as may be necessary for the proper protection thereof…"*

Just a few years later, President Taft reduced the size of Navajo National Monument (Proclamation No. 1186, 37 Stat. 1733, 1912) from 160 square miles to three separate units surrounded by Navajo Nation lands:

- Betatakin—160 acres
- Keet Seel—160 acres
- Inscription House—40 acres

As part of the system of National Parks, Navajo National Monument is managed to conserve scenery, natural and historic objects, and wildlife unimpaired for the enjoyment of present and future generations.

Note: The plateau and canyons have been and continue to be the home of many people, not "unknown" as worded in the 1909 proclamation.

PURPOSE

- To protect outstanding cliff dwellings at Betatakin/Talastima, Keet Seel/Kawestima, and Inscription House/Tsu' ovi and their surrounding environments for future generations.
- To allow, without compromising protection, opportunities to contribute to scientific and ethnographic knowledge.
- To promote visitor understanding of the monument's diverse resources, including the cliff dwellings, their surrounding environments, and their connections to cultures past and present in the region.

The purpose tells why the monument was set aside as a unit of the national park system. It is based on the presidential proclamation and the NPS Organic Act. The significance of the monument tells what makes the area unique—why it is important enough to our cultural and/or natural heritage to warrant national park designation, and how it differs from other parts of the country.

SIGNIFICANCE

- The three cliff dwellings and associated cultural resources provide a comprehensive window into 13th-century life because of their large size and intact condition.
- Exemplary material integrity of Navajo National Monument's structures, architectural details, and artifacts provide specific information about social structure of these 13th-century inhabitants and their interaction with other cultures of the time.
- Navajo National Monument's remoteness and lack of modern intrusions provide visitors an unparalleled opportunity to connect with life in this 13th-century community.
- The cultural and natural resources of Navajo National Monument are central to the spiritual beliefs of Hopi, Navajo, San Juan Paiute, and Zuni Tribes.
- Betatakin/Talastima Canyon shelters an unexpected lush, relic aspen/fir forest, providing a confluence of natural and cultural resources that provide further opportunities to connect with the past.
- American Indian descendents of those who built and occupied the dwellings are alive and still connected spiritually and traditionally to the total environment.

Interpretive themes are the key stories or concepts that every visitor to Navajo National Monument should understand.

PRIMARY INTERPRETIVE THEMES

- The cliff dwellings at Navajo National Monument illustrate the adaptation of a people to their constantly changing environment, the molding and shaping of a culture by natural forces, and how people can both positively and negatively impact their surroundings' ability to support them.
- The well-preserved cliff dwellings and associated artifacts, in a setting largely free of modern intrusions, provide a wealth of information about the habits, social interactions, and social dynamics of the 13th-century inhabitants; reveal a complex and sophisticated civic life that bears close resemblance to modern Pueblo lifeways; and offer opportunities to explore the ides of cultural continuity and change.

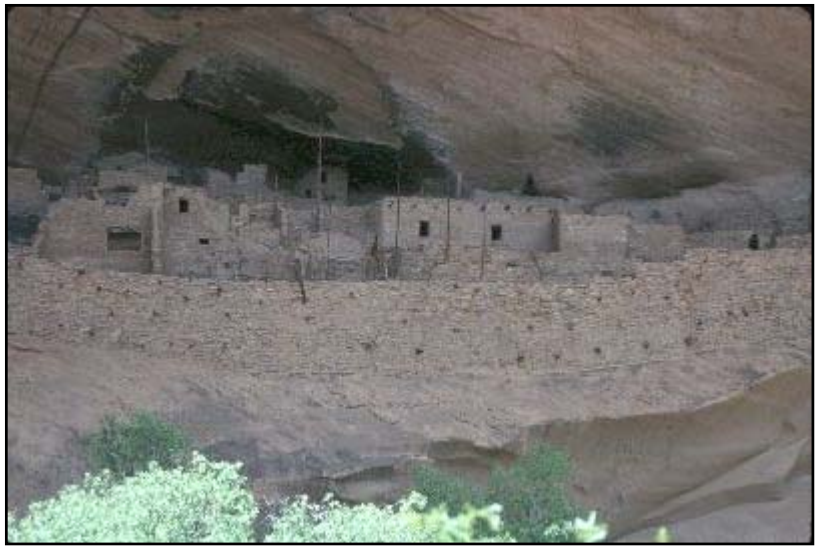
- Natural systems and processes operate in Navajo National Monument to create an environment of great scenic beauty and diverse flora and fauna, an environment that has also supported many centuries of human occupation by diverse cultures extending to the present day, providing opportunities to explore both the material and spiritual links between the environment and human societies.
- Navajo National Monument's cliff dwellings, associated artifacts, and surrounding natural resources all connect to the deeply held and distinct beliefs of the Hopi, Navajo, San Juan Paiute, and Zuni peoples, demonstrating how each society's natural and cultural resources serve as physical manifestations of ancient stories and ceremonies about origins and heritage.

RESOURCES

The mission of the National Park Service is to manage national parks, monuments, and other units of the system:

- to conform to the fundamental purpose of these parks, monuments, or other units;
- to conserve the scenery and the natural and historic objects and the wildlife therein; and
- to provide for the enjoyment of the same and in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

Protecting resources is the primary mission of the National Park Service. The enjoyment of future generations can only be guaranteed if the superb quality of park (or monument) resources and values are left unimpaired. Care must be taken to ensure that park resources and values are not impaired, particularly those that are directly linked to the purpose and significance of the park. At Navajo National Monument, the purpose and significance were identified in the introduction to this plan, and are used to identify "Significant Resource Areas."



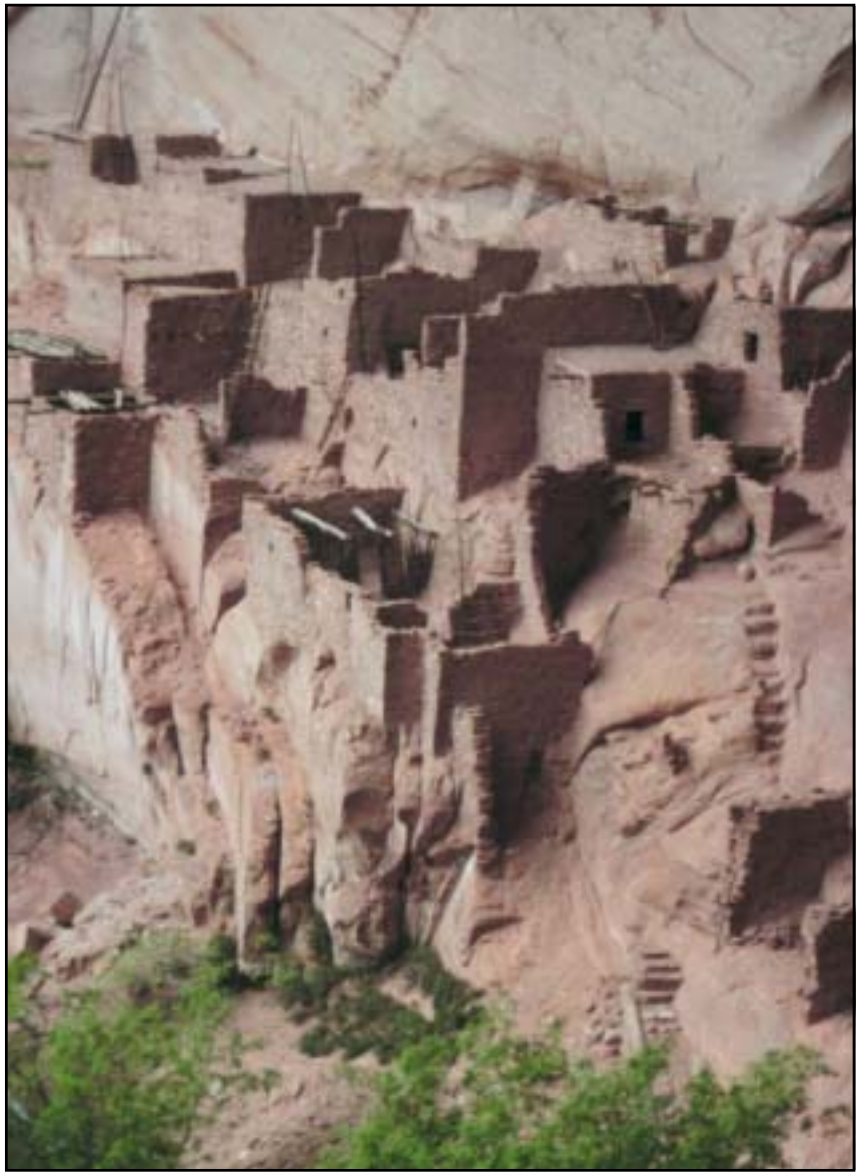
Keet Seel/Kawestima

SIGNIFICANT RESOURCE AREAS

A significant resource area is a unit of land containing a composition of resources that are interrelated and make up a component of the purpose and significance of Navajo National Monument. It is a tool to help organize the values of the components of the monument into geographic areas, so that management prescriptions can be developed to protect significant resources and meet monument goals. Values include cultural resources, geology, vegetation, wildlife, ethnographic resources, hydrology /wetlands / floodplains, visitor experience/understanding, visitor safety, scenic quality, and the natural soundscape.

More detail about monument resources can be found in the "Affected Environment" section of the *Environmental Impact Statement* included with this plan. The *Environmental Impact Statement* is used to evaluate impacts of the plan.

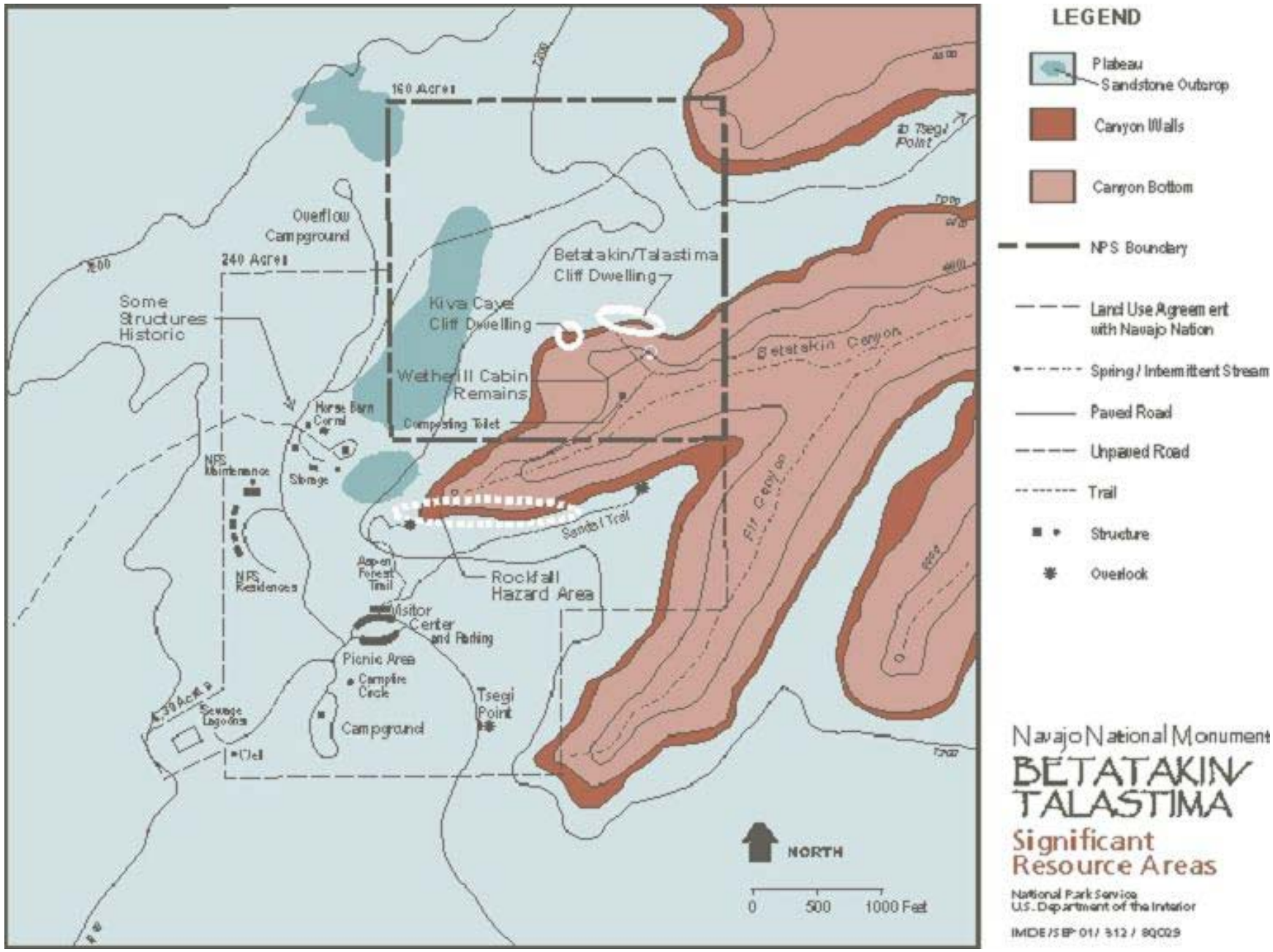
Inscription House/Tsu'Ovi



Betatakin/Talastima

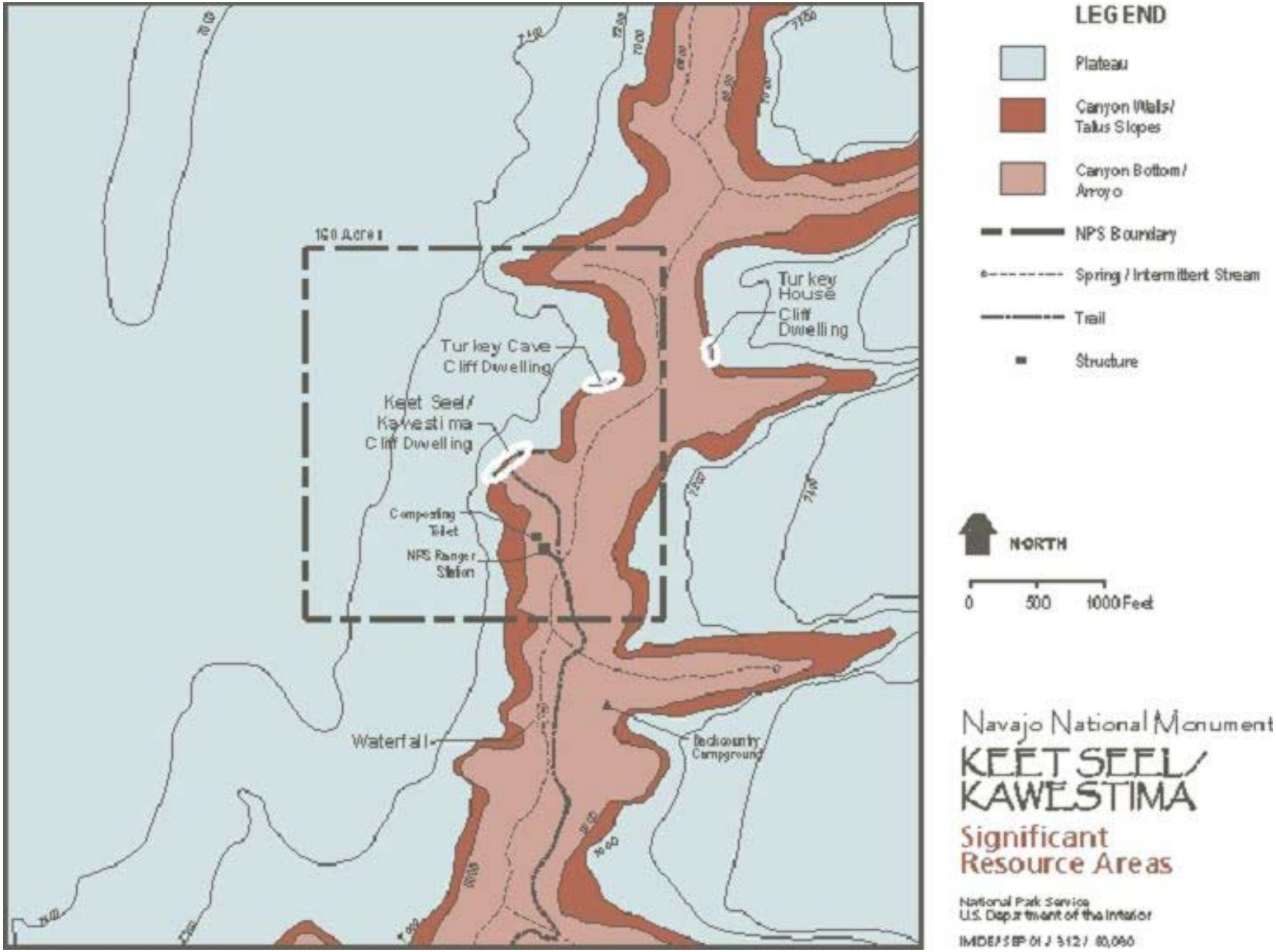
Betatakin/Talastima: Significant Resource Areas

	Plateau	Canyon Walls	Canyon Bottom
General Description	Undulating land on top of the mesas, piñon-juniper, elevation 7,300 feet	Sandstone walls, mostly vertical, firs and other plant life growing on canyon wall overhangs	The relic aspen-fir forest at the bottom of Betatakin Canyon, springs and seeps, canyon can be seen from overlooks and trails
Cultural Resources	Archeological sites, historic sites	Cliff dwellings, petroglyph, hand-hold trails, need to complete archeological surveys	Archeological sites, historic sites
Natural Resources	Sandstone, crypto-biotic soils, piñon-juniper, yucca, roundleaf buffalo berry, cliff rose, Gambel oak, mountain mahogany, deer, coyote, bear, birds, mountain lion, Threatened and endangered species (T&E) habitat (bats, raptors, lizards, owls); precipitation collects in low points, which are biologically diverse	Navajo sandstone walls, alcoves, associated with seeps-riparian hanging gardens; T&E; seeps and springs are associated with riparian vegetation, hanging garden	Relatively stable canyon bottom because of sandstone under soil, vegetative cover, less, moving water resists erosion, "Relic" aspen-fir forest, T&E, may have endemics; invasive tamerisk and Russian olive approaching upper canyon, deer, birds; T&E (raptors, bats, owls, willow flycatcher, black-capped chickadee); USFWS notes high integrity and diversity of flora/fauna; intermittent stream, springs, diverse riparian vegetation, water table
Ethnographic Resources	Many trees, plants, and herbs	Seep/spring areas, petroglyph, cliff dwellings; shrines	Plants, springs, and places important to many people; shrines
Scenic Resources	Expansive vistas, sandstone formations, piñon-juniper	Vertical grandeur, vibrant colors, alcoves	Enclosed canyon, lush forest, pristine landscape, shady and cool
Natural Soundscape	Intrusions from vehicle and aircraft noise, people; wind carries sound; sandstone transmits vibrations of vehicles (road and cattle guard); future road development; and Peabody explosions might transmit through sandstone as well	Alcoves reflect every small noise (natural and human-caused); cliff dwellings sensitive to vibration	Alcoves reflect every small noise (natural and human-caused); cliff dwellings sensitive to vibration
Lightscapes	Intrusions from monument headquarters, employee residence, local residents; community growth from road development	Intrusions from monument headquarters, employee residence, local residents; community growth from road development	Intrusions from monument headquarters, employee residence, local residents; community growth from road development
Opportunities for Visitor Experience and Understanding	Expansive, distant views of canyon country provide context of region and environment; direct view of Betatakin/Talastima links people to cliff dwellings; plants, wildlife, and cultural resources provide direct learning opportunities; visitor center provides off-resource learning	Sensitive resources, vertical walls, rockfall hazard keeps visitors from direct experience; proximate views of cliff dwellings, petroglyph connects people directly to past	Remote, enclosed canyon with welcome vegetation contrast and links environment with cliff dwellings, access to view cliff dwellings, petroglyph provides deep visitor understanding
Visitor Safety	Falling hazard at rim of canyon	Significant rockfall hazard on some north-facing walls and within alcoves; heat exhaustion when hiking out of canyon	Potential forest fire danger and rockfall from above canyon floor


LEGEND
Plateau
Sandstone Outcrop
Canyon Walls
Canyon Bottom
NPS Boundary
Land Use Agreement with Navajo Nation
Spring / Intermittent Stream
Paved Road
Unpaved Road
Trail
Structure
Overlook
160 Acres
240 Acres
Overflow Campground
Some Structures Historic
Betatakin/Talastima Cliff Dwelling
Kiva Cave Cliff Dwelling
Wetherill Cabin Remains
Composting Toilet
Horse Barn Corral
NPS Maintenance
Storage
NPS Residences
Aspen Forest Trail
Rockfall Hazard Area
Visitor Center and Parking
Picnic Area
Campfire Circle
Campground
Tsegi Point
Sewage Lagoons
Well
Betatakin Canyon
Fir Canyon
Sandal Trail
NORTH
0
500
1000 Feet
Navajo National Monument
BETATAKIN/ TALASTIMA
Significant Resource Areas
National Park Service
U.S. Department of the Interior
IMDE/SBP 017/ 312/ 80029

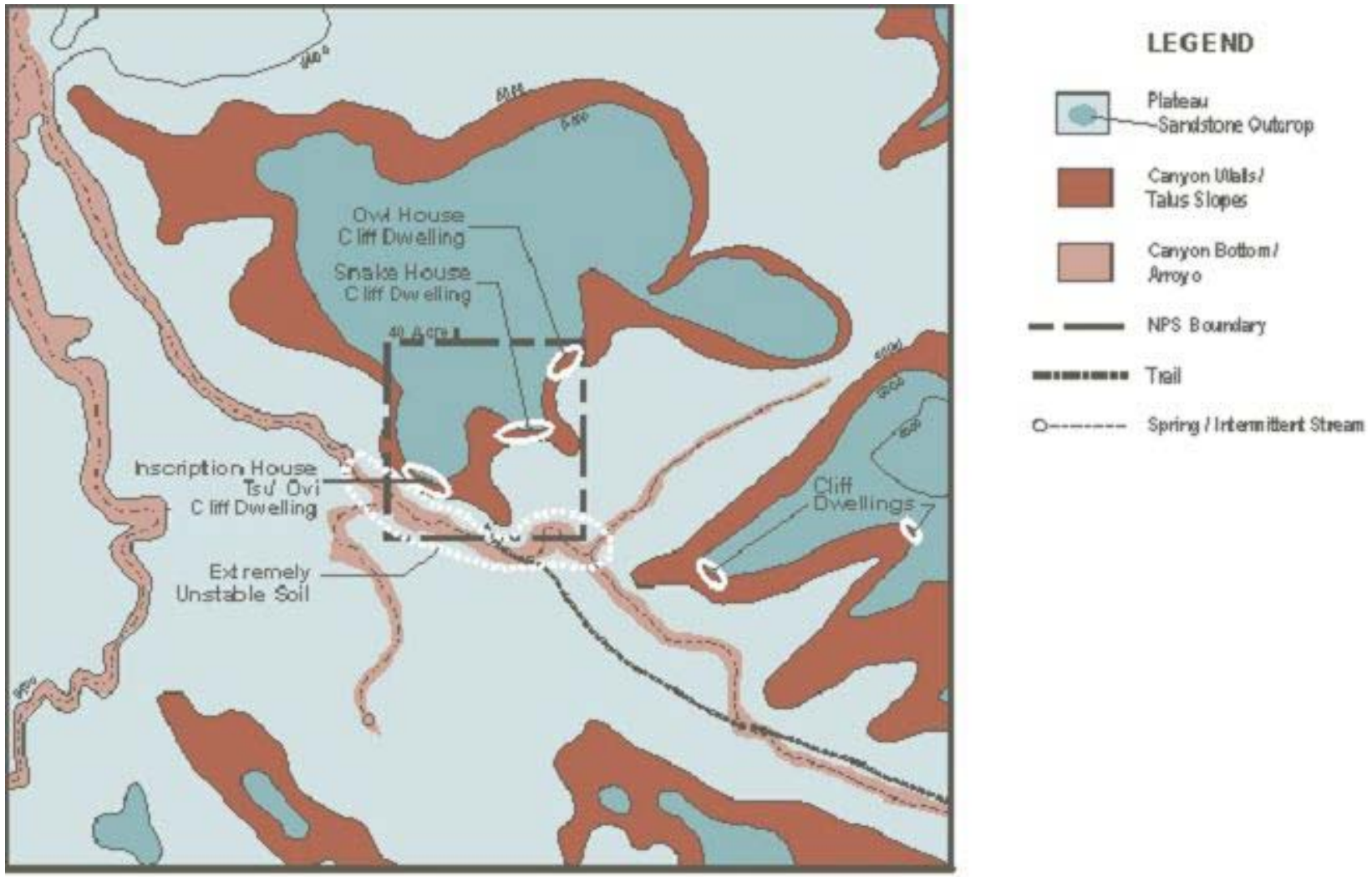
Keet Seel/Kawestima: Significant Resource Areas

	Plateau	Canyon Walls/Talus Slopes	Canyon Bottom/Arroyo
General Description	Undulating land on top of the mesas, piñon-juniper, elevation 6,600–7,500 feet, heavily grazed	Sandstone walls, stepped mesas and vertical, piñon-juniper-oak, other plant life growing on canyon wall overhangs and alcoves	Heavily grazed and trampled area, large arroyo cuts, sand dunes, livestock
Cultural Resources	Archeological sites, historic sites	Cliff dwellings, petroglyph, hand-hold trails, alcoves contain prehistoric ruins mostly and a petroglyph	Archeological sites, historic sites, open sites
Natural Resources	Sandstone, crypto-biotic soils, piñon-juniper, yucca, roundleaf buffalo berry, cliff rose, Gambel oak, mountain mahogany, deer, coyote, bear, birds, mountain lion, Threatened and endangered species (T&E) habitat (bats, raptors, lizards); precipitation collects in low points, which are biologically diverse	Navajo sandstone walls, alcoves; possible T&E; yucca, piñon-juniper, Gambel oak; invasive tamarisk and plum; springs	Very unstable canyon bottom because of lowering water table and overgrazing (arroyo cutting); deer, birds, mountain lion; T&E (raptors, bats, willow flycatcher); Keet Seel creek, mesa top water runoff, springs
Ethnographic Resources	Piñon-juniper area not as heavily grazed as Inscription House area	Petroglyph, cliff dwellings, springs	Historic and archeological sites important to many people, springs
Scenic Resources	Expansive vistas, sandstone formations, piñon-juniper, sand dunes, Skeleton Mesa	Vertical grandeur, vibrant colors, alcoves	Many side canyons, sand dunes, Laguna Creek, waterfalls
Natural Soundscape	Quiet most of the time, noise from small all-terrain vehicles and air traffic, potential for road development on Skeleton Mesa	Small quiet alcoves, canyon walls create echoes, potential for intrusions from road development on Skeleton Mesa	Birds, rustling leaves, flowing Laguna Creek, waterfalls, potential for intrusions from road development on Skeleton Mesa
Lightscapes	Intrusions from local residents; Skeleton Mesa	Intrusions from local residents; Skeleton Mesa	Intrusions from local residents; Skeleton Mesa
Opportunities for Visitor Experience and Understanding	Remote mesa environment; plants and wildlife; Navajo culture	Sensitive resources, vertical walls, rockfall hazard keeps visitors from direct experience; proximate views of cliff dwellings, petroglyph connect people directly to past	Remote canyon environment, plants and wildlife, Navajo culture, access to view cliff dwellings, petroglyph
Visitor Safety	Falling hazard at rim of canyon not as significant as it is at Betatakin	Some rockfall hazard along trail and in alcoves; heat exhaustion when hiking out of canyon	Potential rockfall from above canyon floor; serious flash flooding; overheating; moderate to difficult hiking; sand dunes


160 Acres
Turkey House Cliff Dwelling
Turkey Cave Cliff Dwelling
Keet Seel/ Kawestima Cliff Dwelling
Composting Toilet
NPS Ranger Station
Waterfall
Backcountry Campground
LEGEND
Plateau
Canyon Walls/ Talus Slopes
Canyon Bottom/ Arroyo
NPS Boundary
Spring / Intermittent Stream
Trail
Structure
NORTH
0
500
1000 Feet
Navajo National Monument
KEET SEEL/ KAWESTIMA
Significant Resource Areas
National Park Service
U.S. Department of the Interior

Inscription House/Tsu' Ovi: Significant Resource Areas

	Plateau	Canyon Walls/Talus Slopes	Canyon Bottom/Arroyo
General Description	Undulating land on top of the mesas, piñon-juniper, elevation 4,500-6,000 feet, heavily grazed	Sandstone walls, mostly vertical, piñon-juniper-oak; other plant life growing on canyon wall overhangs and alcoves	Heavily grazed and trampled area, large arroyo cuts, sand dunes, livestock
Cultural Resources	Archeological sites, historic sites	Cliff dwellings, petroglyph, hand-hold trails, every alcove has a historic and/or prehistoric component	Archeological sites, historic sites, open sites
Natural Resources	Sandstone, crypto-biotic soils, piñon-juniper, yucca, roundleaf buffalo berry, cliff rose, Gambel oak, mountain mahogany, deer, coyote, bear, birds, mountain lion, Threatened and endangered species (T&E) habitat (bats, raptors, lizards); precipitation collects in low points, which are biologically diverse	Cliff dwellings, petroglyph, hand-hold trails, every alcove has a historic and/or prehistoric component	Very unstable canyon bottom because of lowering water table and overgrazing (arroyo cutting); deer, birds, mountain lion, rattlesnakes other reptiles; T&E (raptors, bats, willow flycatcher); intermittent stream, mesa top water runoff
Ethnographic Resources	Piñon-juniper, very little grass, overgrazing	Petroglyph, cliff dwellings	Historic and archeological sites important to many people
Scenic Resources	Expansive vistas, sandstone formations, piñon-juniper, sand dunes	Vertical grandeur, vibrant colors, alcoves, arches	Many side canyons, sand dunes
Natural Soundscape	Quiet most of the time, noise from small vehicles and air traffic	Small quiet alcoves, canyon walls create echoes	Birds, rustling leaves, flowing Navajo Creek
Lightscapes	Minimal intrusion from local residents, Inscription House Trading Post	Minimal intrusion from local residents, Inscription House Trading Post	Minimal intrusion from local residents, Inscription House Trading Post
Opportunities for Visitor Experience and Understanding	Remote mesa environment; plants and wildlife; Navajo culture	Sensitive resources, vertical walls, rockfall hazard keeps visitors from direct experience; proximate views of cliff dwellings, petroglyph connects people directly to past	Remote canyon environment; plants and wildlife; Navajo culture; access to view cliff dwellings, petroglyph
Visitor Safety	Falling hazard at rim of canyon not as significant as at Betatakin	Some rockfall hazard along trail and in alcoves; heat exhaustion when hiking out of canyon; Snake House significant rockfall	Potential rockfall from above canyon floor; flash flooding; unstable soils


Ovi House
Cliff Dwelling
Snake House
Cliff Dwelling
Inscription House
Tsu' Ovi
Cliff Dwelling
Extremely
Unstable Soil
Cliff
Dwellings
LEGEND
Plateau
Sandstone Outcrop
Canyon Walls /
Talus Slopes
Canyon Bottom /
Arroyo
NPS Boundary
Trail
Spring / Intermittent Stream
NORTH
0
500
1000 Feet
Navajo National Monument
INSCRIPTION HOUSE/TSU'OVI
Significant Resource Areas
National Park Service
U.S. Department of the Interior

MISSION GOALS

What are the ideal conditions that the National Park Service should try to attain?

Resource Stewardship

A. Stewardship for cliff dwellings and all other cultural resources balances National Park Service laws and policies with American Indian concerns.

B. Natural resources (processes, systems, and values) are allowed to continue in balance with stewardship of archeological resources and the greater ethnographic landscape.

C. Water quality and quantity, good air quality, species that are threatened, endangered, or of concern, scenic vistas, and natural soundscapes and lightscapes are protected.

D. Museum collection of artifacts and archives are properly inventoried, catalogued, stored, and secured, and through consultation with affiliated American Indian tribes, appropriate items are repatriated.

Visitor Understanding

E. Visitors understand and appreciate native and other cultures of this region through time.

F. A range of experiences are provided that promote visitor understanding of the resourcefulness of the 13th-century cliff dwelling builders, the wholeness of the environment, connections to other cultures, and spiritual values.

G. The remoteness that has kept the ancient dwellings in such pristine condition and that fosters within visitors an element of mystique and desire to explore is protected, as is an understanding of the wholeness of the landscape and peoples.

H. Opportunities for people with disabilities are expanded and improved.

I. Opportunities for youth to gain understanding about the monument as well as participate in its management are expanded and improved.

Partnerships

J. Good relationships with all associated American Indian groups are developed and maintained.

K. American Indian tribes are involved in the interpretation and management of resources.

Facilities And Operations

L. Safe, quality, sustainable facilities fulfill desired visitor experience and support maintenance and administration.

M. An adequate land base and agreements ensure visitor access and administration.

N. Local American Indian employees are recruited and retained to provide broader perspectives on management and enrich visitor understanding.

MAIN ISSUES OF THE GMP

These issues were uncovered during public scoping and tribal consultations regarding the general management plan.

Resource Stewardship

- Unauthorized access and vandalism threaten destruction of cliff dwellings.
- Pressure for more visitor access (visitors and economic development for Navajo Nation) threatens sensitive resources, including species that are threatened, endangered, or of concern.
- Artifacts—The Native American Graves Protection and Repatriation Act (NAGPRA) needs to be addressed; need proper storage and cataloging.
- NPS policies and American Indian concerns may conflict.
- Adjacent land—uses have effects on air, water, natural quiet, views, dark night sky.
- Scenic aircraft overflights impair natural quiet and visitor understanding.
- Visitor use may disrupt ethnographic use.
- Navajo Nation and Natural Heritage Program are interested in collaborative management of natural resources.

Visitor Understanding

- What is the main message to visitors from Navajo National Monument?
- Opportunities to more broadly interpret cultures are missed.
- Most visitors will not visit ancient dwellings. How do they understand the story and significance?
- The monument does not offer much for children; little outreach.
- Some visitors want more access to cliff dwellings.
- The alcove over Betatakin cliff dwelling is not safe for visitors to enter.
- Opportunities for people with disabilities are limited.
- A third of visitors are from foreign countries, and there are language barriers to providing information and understanding.
- The name “Navajo National Monument” is often confused with “Monument Valley” and does not fully represent associated American Indian tribes.

Partnerships

- The NPS is dependent upon the Navajo Nation to fulfill its mission (land under agreement for most facilities, access to Keet Seel, Betatakin, Inscription House, help from local grazing permit holders for prevention of trespass), and existing agreements may not be adequate for the future.
- The Navajo Nation is interested in economic development from tourism, some of which may be inconsistent with the NPS mission.
- Other associated American Indian tribes want more involvement in Navajo National Monument.
- Better communication is needed with all associated American Indian tribes.

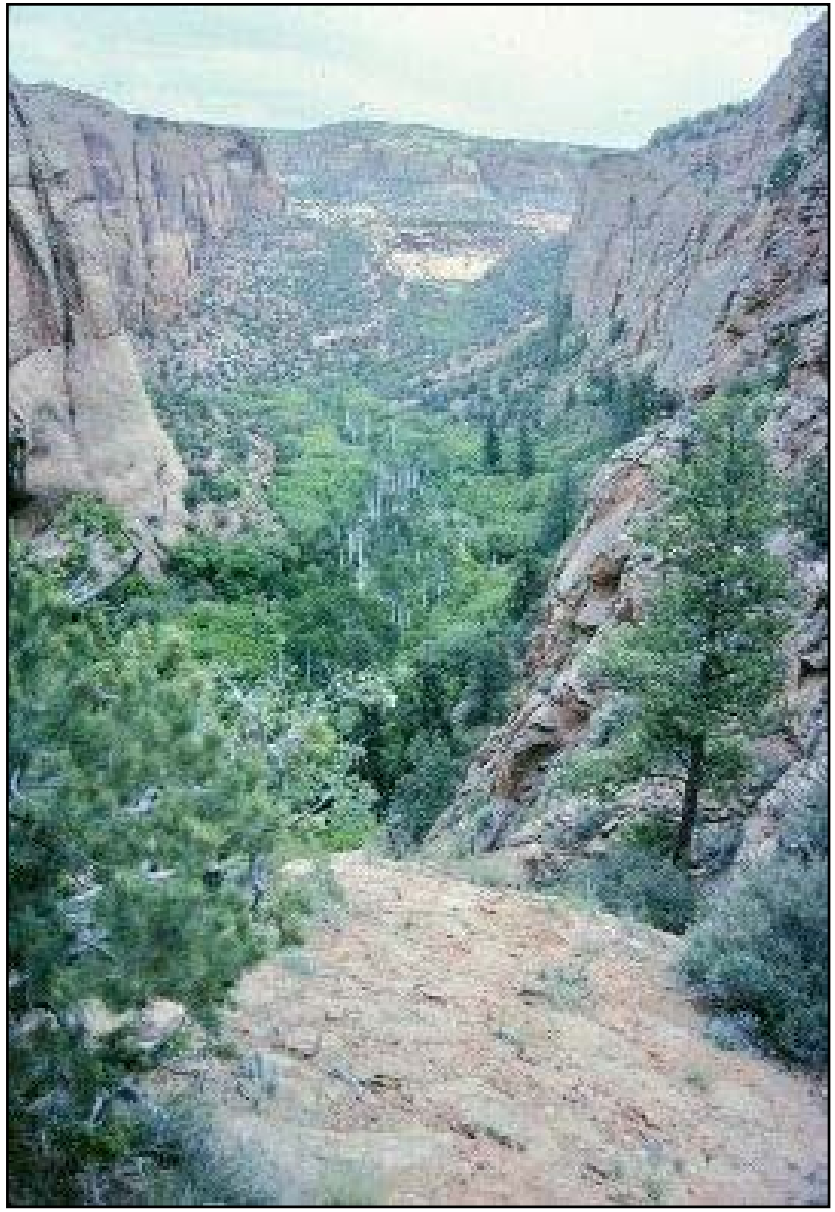
Facilities And Operations

- Existing facilities and infrastructure are almost 50 years old and inadequate.
- Aspen Forest trail is unsafe below the overlook.
- Local staff is extremely valuable, and needs to continue to be recruited and retained.
- Recruitment of members of other associated tribes is needed.
- More staff may be needed to implement the plan. The lack of employee housing is a significant obstacle to hiring nonlocal staff.

Based on the purpose and significance of the monument, the mission of the National Park Service, and the comments received from the public and through tribal consultation, these are the central questions to be answered by the general management plan.

Core Questions of the GMP

1. RESOURCE STEWARDSHIP—How will resources be protected for future generations?
2. VISITOR UNDERSTANDING—How will visitor understanding be improved?
3. PARTNERSHIPS—How will associated American Indian tribes, scientists, and others be more fully involved with the monument?
4. FACILITIES AND OPERATIONS—What facilities, staff, and funding will be needed to fulfill the plan?



PLAN AND ALTERNATIVES INCLUDING THE PREFERRED

INTRODUCTION

Organization Of The Plan And Alternatives

The plan consists of a variety of actions that will be taken in all alternatives to meet the mandates, policies, and practices of the National Park Service, and actions to which there are alternatives. To give a coherent picture of how the park will be managed for the core questions of the plan (resource stewardship, visitor understanding, partnerships, and facilities and operations), each will be addressed for common elements and alternatives. Alternative C has been identified as the preferred alternative by the National Park Service. The Alternatives section is organized in the following manner:

- **Philosophy of Alternatives**—the general overview of the intent of the alternative.
- **Management Prescriptions**—how the units of Navajo National Monument would be managed under the alternatives to achieve goals.
- **Resource Stewardship**—How will resources be protected for future generations?
    - Mission Goals
    - Actions Common to All Alternatives
    - Alternatives
- **Visitor Understanding**—How will visitor understanding be improved?
    - Mission Goals
    - Actions Common to All Alternatives
    - Alternatives
- **Partnerships**—How will associated American Indian tribes, scientists, and others be more fully involved with the monument?
    - Mission Goals
    - Actions Common to All Alternatives
    - Alternatives
- **Facilities and Operations**—What facilities, staff, and funding will be needed to fulfill the plan?
    - Mission Goals
    - Actions Common to All Alternatives
    - Alternatives

PHILOSOPHY OF THE ALTERNATIVES

Alternative A (No Action)

This alternative would continue existing management practices, resulting in current resource conditions and visitor experiences and the logical progression of known trends over time. It is required as a baseline against which the other alternatives can be compared.

Alternative B Focus on NPS Land

The National Park Service would focus management on the existing land base to achieve the purposes of the monument. Primary resource protection and visitor understanding would be accomplished on the three federal units at Betatakin, Keet Seel, and Inscription House. Improvements

to resource protection would be made with additional NPS ranger patrol staff and ranger stations. Visitor understanding would be improved with a remodeled or enlarged visitor center, more trails and overlooks, and more outdoor exhibits and interpretive rangers on the mesa top at Betatakin. The NPS would continue to work cooperatively with the Navajo Nation for maintaining trail access to Betatakin and Keet Seel.

Alternative C Emphasize Partnerships (Preferred)

The National Park Service would continue to manage the existing land base (similar to Alternative B), and in addition would share common goals with American Indian tribes and others to protect resources and promote visitor understanding of the entire region. The NPS would look beyond the boundary for accomplishing joint purposes through cooperation and partnerships. Opportunities for more innovative and diverse programs, education and outreach, science and research, cross training, and broader resource management would be greatly enhanced by a collaborative regional effort.

MANAGEMENT PRESCRIPTIONS

Management prescriptions are an important part of a general management plan. They are based on the broad analysis of primary resource values, developed in this plan as "significant resource areas," as well as on the mission goals for the monument. Prescriptions are defined and applied to each particular area of the monument and have two components:

- Description of the desired resource conditions and visitor experiences to be achieved and maintained over time
- Identification of the kind and levels of visitor use, management activities, and development that are appropriate for maintaining the desired conditions

For Navajo National Monument, management prescriptions have been developed for the following management areas:

- Conservation Backcountry
- Low-Use Backcountry
- Backcountry Service and Support
- Front Country Trail
- Developed Front Country

The general characteristics of these management prescriptions are described below. They are then applied to each unit, and tailored slightly to the unique characteristics of the unit, and not all prescriptions are used in every unit. The configuration of how they are applied varies with Alternatives B and C, to fit the philosophy of those alternatives. The prescriptions are not applied to Alternative A, which is the "no action" alternative. Tables and maps on the following pages illustrate the management that is proposed for the units under the alternatives.

Conservation Backcountry

- **General:** Land within this prescription contains very sensitive resources and is off limits to visitors.
- **Resource Condition:** Resources, systems, and processes are generally unimpaired by human influences. Access for traditional cultural purposes will continue through the issuance of special use permits when necessary. While grazing is not allowed on NPS land, there are areas affected by livestock that trespass, and they are managed to mitigate those impacts.

- **Remoteness:** The setting is natural, without man-made intrusions in the landscape such as buildings or roads. The area is quiet, with only natural sounds. At night the sky is generally dark.
- **Visitor Understanding and Experience:** Visitors view the area from a distance and learn from off site, because they are not allowed in this area.
- **Facilities:** None.
- **NPS Management Activities:** To manage the unit, the National Park Service will conduct research, patrols, mitigation, and maintenance. Horses or vehicles will not be used.

Low-Use Backcountry

- **General:** The area within this prescription also contains very sensitive resources, and visitor opportunities to experience these resources are guided.
- **Resource Condition:** Resources, systems, and processes have a very high integrity. There may be a slight disturbance in the travel corridor, but the area is otherwise undisturbed by human influences. Access for traditional cultural purposes will continue through the issuance of special use permits when necessary. While grazing is not allowed on NPS land, there are areas affected by livestock that trespass, and they are managed to mitigate those impacts.
- **Remoteness:** Natural setting has few man-made intrusions. The natural soundscape would dominate, with occasional noise from other visitors or activities of neighbors. At night the sky is generally dark.
- **Visitor Understanding and Experience:** Visitors can experience canyon views and remoteness and undertake moderate to strenuous guided hikes to cliff dwellings and other remarkable resources. The effort required and limited times and sizes of tours make this experience available to only a small percentage of visitors. Horses, bicycles, or vehicles are not allowed.
- **Facilities:** Facilities include unpaved trails, signs, fences, composting toilets, supply caches, and radio repeaters.
- **NPS Management Activities:** To manage the unit, the National Park Service will conduct patrols, research, mitigation, and maintenance. Horses or vehicles will not be used.

Backcountry Service and Support

- **General:** This prescription area, used only at the Keet Seel unit, is largely natural but slightly modified to support visitor and management activities.
- **Resource Condition:** Resources, systems, and processes have good integrity. There may be disturbances from visitors, management, and trespass grazing. Efforts will be made to eliminate trespass grazing and trampling and to mitigate impacts. Access for traditional cultural purposes will continue through the issuance of special use permits when necessary.
- **Remoteness:** The setting is largely natural, with some sound and light intrusions from lanterns, campers, pack stock, and occasional management use of a helicopter or ATV for resupply.
- **Visitor Understanding and Experience:** A variety of experiences are available for visitors, including backcountry camping, picnicking, and ranger programs. Visitor use of vehicles or pack stock will not be allowed on NPS land, however, may be allowed outside of the boundary at a designated staging area if such an area is agreed on through partnerships.
- **NPS Management Activities:** To manage the unit, the National Park Service will conduct patrols, research, mitigation, and maintenance, and may use occasional pack stock, helicopters, or vehicles (ATV's) to resupply the ranger station.

Front Country Trail

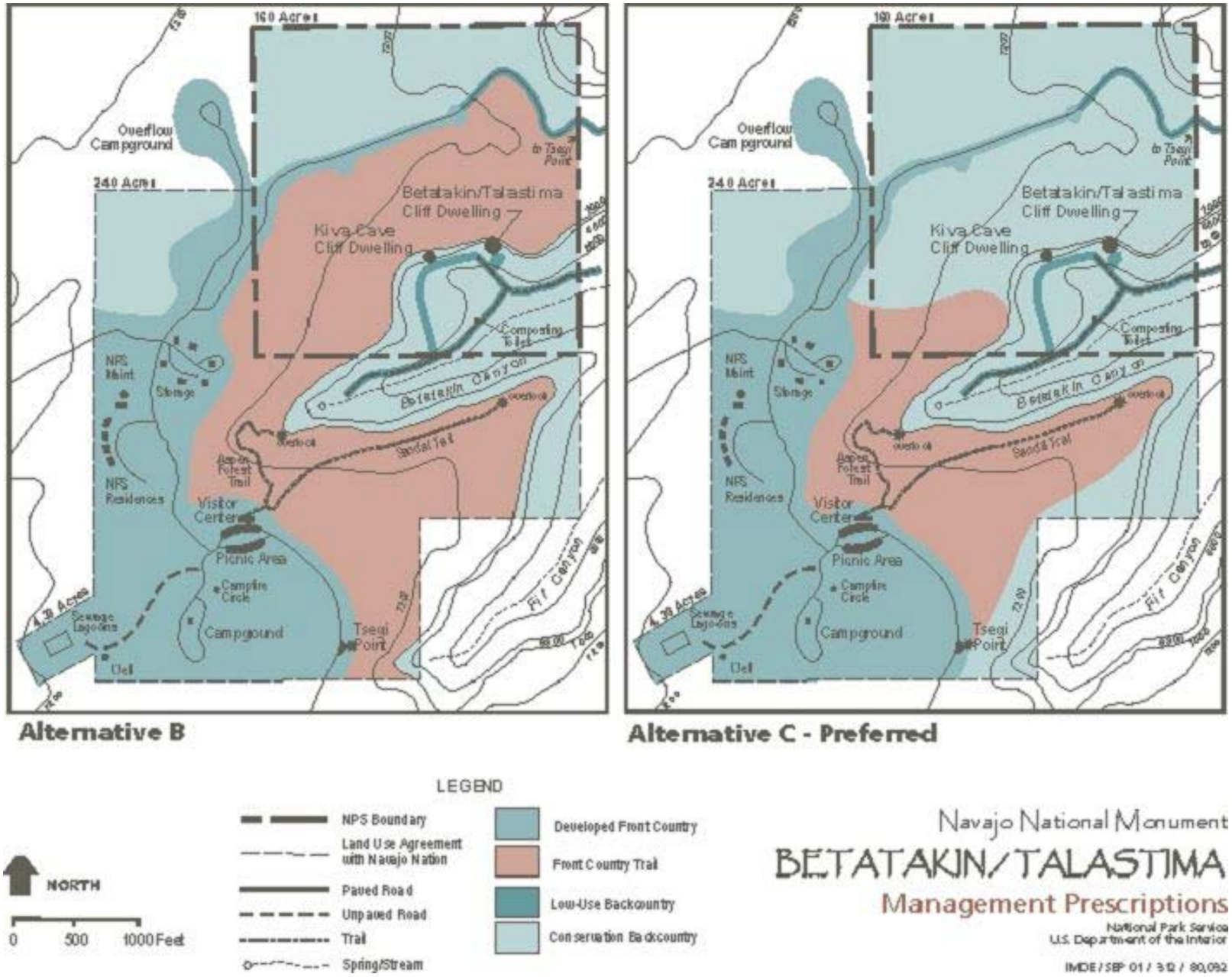
- **General:** This prescription area, used only at the headquarters area on the rim, is largely natural but contains a network of easy to moderate trails and minor facilities for many visitors to experience resources of Navajo National Monument.
- **Resource Condition:** The integrity of resources, systems, and processes is good, but modifications have been made for trails and associated minor facilities and there are some effects resulting from the large number of visitors in this prescription area.
- **Remoteness:** The character is rural, but busy with people and nearby development that interrupts the natural soundscape with vehicle noise and talking and pierces the darkness with some light from employee housing.
- **Visitor Understanding and Experience:** A variety and network of trails and overlooks offer a great number of visitors the opportunity to hike on their own and learn independently from wayside exhibits. There are also opportunities for ranger-led walks and a variety of opportunities for people with disabilities. Vehicles, horses, and bicycles are not allowed
- **Facilities:** This prescription area includes paved and unpaved trails, viewpoints, wayside exhibits, signs, composting or vault toilets, benches, and shade structures.
- **NPS Management Activities:** To manage the unit, the NPS will conduct research, patrols, mitigation, and maintenance, and may use occasional vehicles (ATV's) or pack stock to support maintenance.

Developed Front Country

- **General:** This prescription area contains most of the visitor and administrative facilities of the monument and is only used at the headquarters unit.
- **Resource Condition:** A natural appearance is maintained, but disturbances will occur to allow facilities needed for visitors and administration. Impacts of grazing and trampling on agreement land are minimized. Access for traditional cultural purposes will continue through the issuance of special use permits when necessary.
- **Remoteness:** Rural character, but definitely developed with buildings, utilities, parking lots, and roads. Natural soundscapes and lightscapes are affected by noise and light from vehicles, visitors, and maintenance and staff activities. Occasional odors from the sewage lagoon affect campers.
- **Visitor Understanding and Experience:** A wide variety of activities, programs, and facilities provide visitors opportunities to learn about and enjoy the monument. They include the visitor center, audio-visual programs, exhibits, a bookstore, short walks, ranger programs, camping, driving and bicycling on roads, and opportunities for people with disabilities. With most visitors staying only a short time, this is the primary area for visitors to experience Navajo National Monument.
- **Facilities:** Structures include the visitor center, administration space, storage buildings, NPS maintenance buildings, NPS employee residences, and a well house. Other facilities include a campground, picnic area, amphitheater, parking, roads, overlooks, and utilities.
- **NPS Management Activities:** This prescription area contains most of the NPS management activities, including motor vehicles on roads, patrols, maintenance, mitigation, and development of new facilities.

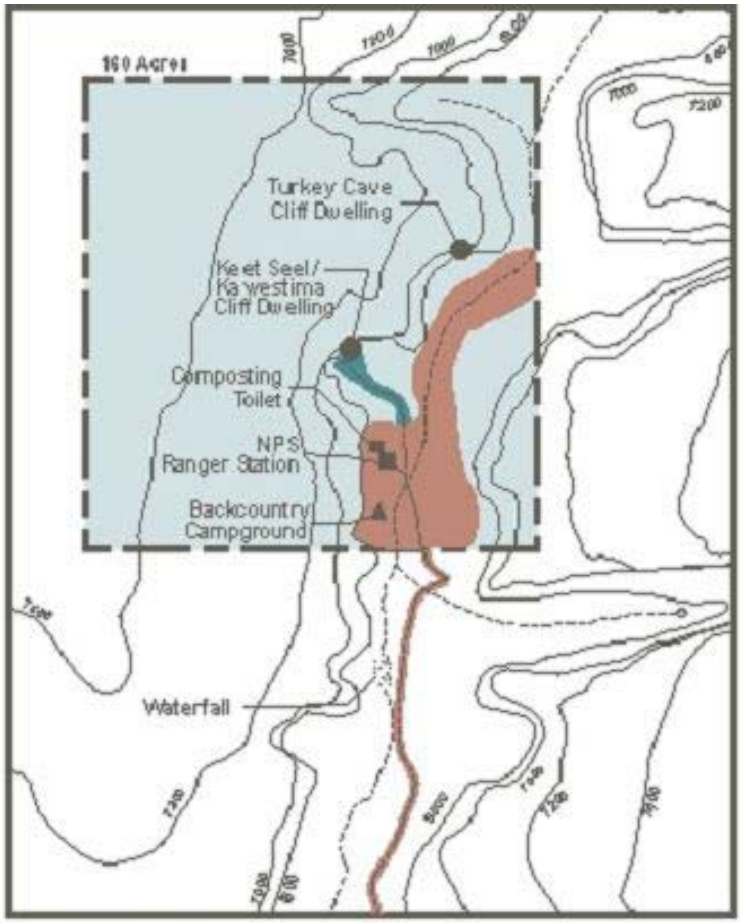
Betatakin/Talastima Management Prescriptions

	Conservation Backcountry	Low-Use Backcountry	Front Country Trail	Developed Front Country
Resource Condition	Resources, systems, and processes are preserved unimpaired; access for traditional cultural purposes will continue through the issuance of special use permits when necessary; grazing and trampling impacts minimized on agreement land.	High integrity of resources, systems, and processes; access for traditional cultural purposes will continue through the issuance of special use permits when necessary; grazing and trampling impacts minimized on agreement land.	Good integrity of resources, systems, and processes; access for traditional cultural purposes will continue through the issuance of special use permits when necessary; grazing and trampling impacts minimized on agreement land.	Natural appearance is maintained, but disturbances will occur to develop/maintain facilities; access for traditional cultural purposes will continue through the issuance of special use permits when necessary; grazing and trampling impacts minimized on agreement land.
Remoteness	Natural landscape, natural soundscapes and lightscapes.	Natural setting with a few man-made intrusions, minimal sound intrusion, lightscapes.	Rural setting affected by sight, sound, and light from development, visitors, staff, vehicles, lights, and by odors from sewer lagoon.	Developed area with development, visitors, staff activities, vehicles, lights, and odor from sewer lagoon.
Visitor Understanding and Experience	View and learn from off site; no visitors allowed in area.	Canyon views, moderate to strenuous guided hiking tours, remote experience,; no bicycles, horses, or vehicles.	Distant landscape vistas; easy to moderate self-guided hiking; independent learning from waysides, ranger-led walks; opportunities for people with disabilities; no bicycles, horses, or vehicles.	Visitor Center, AV programs, exhibits, short walks, picnicking, bookstore, ranger programs, camping, driving and bicycling on roads; opportunities for people with disabilities.
Facilities	None.	Unpaved trails, signs, fences, composting toilets, supply caches, radio repeaters.	Paved and unpaved trails, viewpoints, wayside exhibits, signs, composting or vault toilets, benches, shade structures.	Structures, roads, trails, signs, power and water lines, maintenance and administrative buildings.
NPS Management Activities	Research, patrols, mitigation, maintenance; no motor vehicle use or pack stock use.	Patrols, research, tours, mitigation, maintenance; no motor vehicle use or pack stock use.	Motor vehicle (ATV) use, pack stock, research, patrols, mitigation, maintenance.	Maximum NPS activity: motor vehicles on roads, patrols, maintenance, facility development.

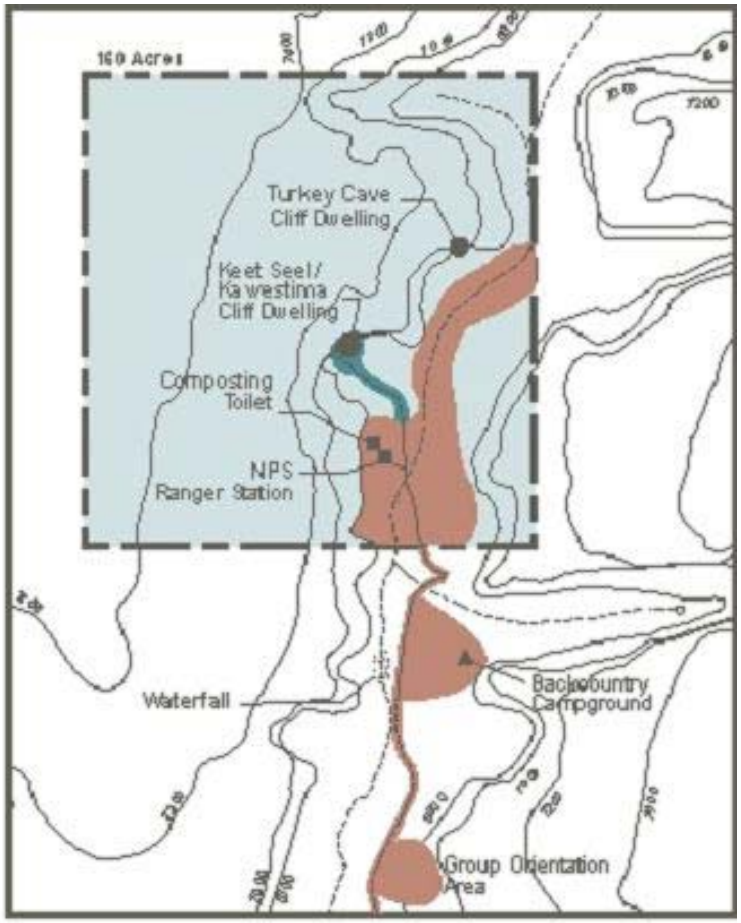

160 Acres
240 Acres
Overflow Campground
Betatakin/Talastima Cliff Dwelling
Kiva Cave Cliff Dwelling
Composting Toilet
Betatakin Canyon
Spoon Trail
Aspen Forest Trail
NPS Maint
Storage
NPS Residences
Visitor Center
Picnic Area
Campfire Circle
Campground
Tsegi Point
Sewage Lagoons
4.39 Acres
Dell
Fir Canyon
Alternative B
Alternative C - Preferred
LEGEND
NPS Boundary
Land Use Agreement with Navajo Nation
Paved Road
Unpaved Road
Trail
Spring/Stream
Developed Front Country
Front Country Trail
Low-Use Backcountry
Conservation Backcountry
NORTH
0
500
1000 Feet
Navajo National Monument
BETATAKIN/TALASTIMA
Management Prescriptions
National Park Service
U.S. Department of the Interior
IMDE / SBP 01 / 312 / 80,092

Keet Seel / Kawestima Management Prescriptions

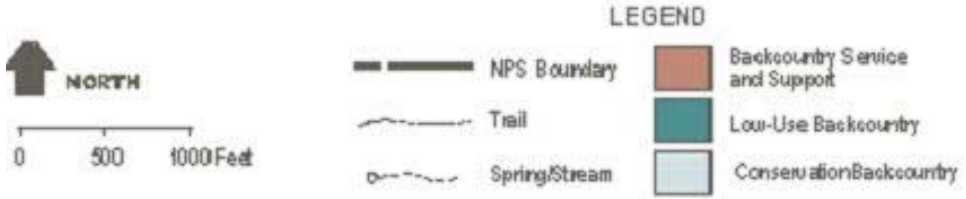
	Conservation Backcountry	Low-Use Backcountry	Backcountry Service and Support
Resource Condition	Resources, systems, and processes are preserved unimpaired; access for traditional cultural purposes will continue through the issuance of special use permits when necessary.	High integrity of resources, systems, and processes; access for traditional cultural purposes will continue through the issuance of special use permits when necessary.	Good integrity of resources, systems, and processes; access for traditional cultural purposes will continue through the issuance of special use permits when necessary; grazing and trampling impacts minimized.
Remoteness	Natural landscape, natural soundscapes and lightscapes.	Natural setting with a few man-made intrusions, minimal sound intrusion, lightscapes.	Natural setting, some sound/light intrusions from ATV's, lanterns, pack stock, helicopter, etc.
Visitor Understanding and Experience	View and learn from off site, no visitors allowed on site.	Canyon views, moderate to strenuous guided hiking tours, remote experience; no bicycles, horses, or vehicles.	Canyon views, picnicking, camping, guided hiking, ranger programs; visitor pack stock or vehicles only outside of boundary.
Facilities	None.	Unpaved trails, signs, fences, composting toilets, supply caches, radio repeaters.	Trails, ATV parking area, ranger station, composting toilets, helicopter landing zone, picnic area, wayside exhibits.
NPS Management Activities	Research, patrols, mitigation, maintenance; no motor vehicle use or pack stock use.	Patrols, research, tours, mitigation, maintenance; no motor vehicle use or pack stock use.	Research, patrols, mitigation, maintenance, occasional motor vehicle use (ATV), helicopter use, pack stock (except not within federal unit under Alternative C).



Alternative B



Alternative C - Preferred



Navajo National Monument

KEET SEEL/KAWESTIMA

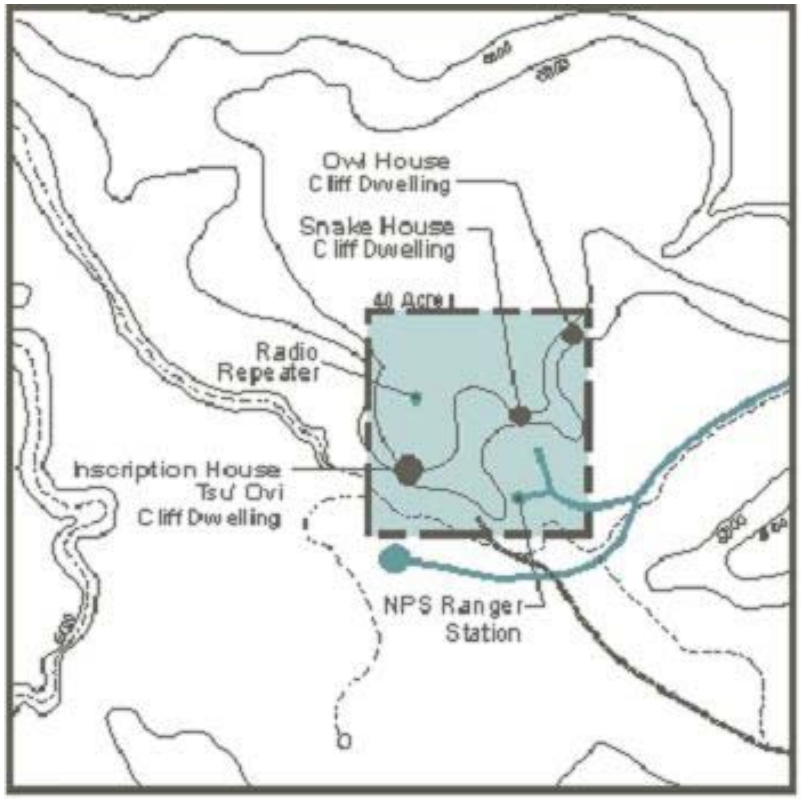
Management Prescriptions

National Park Service
U.S. Department of the Interior

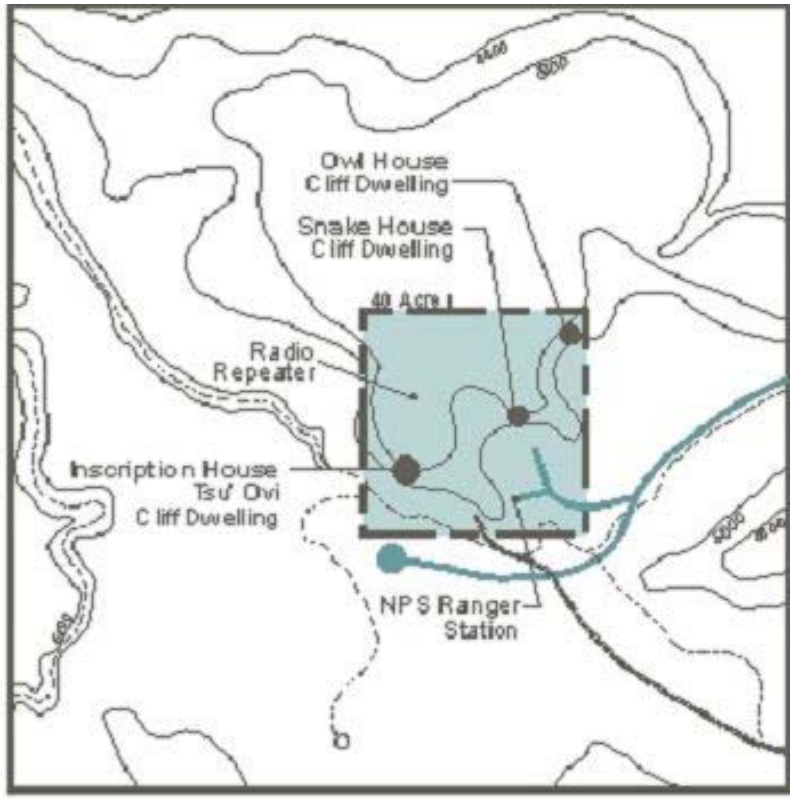
IMDE / SEP 01 / 312 / 80,093

Inscription House/Tsu' Ovi Management Prescriptions

	Conservation Backcountry	Low-Use Backcountry
Resource Condition	Resources, systems, and processes are preserved unimpaired; access for traditional cultural purposes will continue through the issuance of special use permits when necessary; grazing and trampling impacts minimized.	High integrity of resources, systems, and processes; access for traditional cultural purposes will continue through the issuance of special use permits when necessary; grazing and trampling impacts.
Remoteness	Natural landscape, natural soundscapes and lightscapes.	Natural setting with a few man-made intrusions, minimal sound intrusion, lightscapes.
Visitor Understanding and Experience	View and learn from off site, no visitors allowed on site.	Canyon and expansive views, guided tours, remote experience; no vehicles, bicycles, or horses.
Facilities	None.	Trails, fences, ranger station, supply cache, composting toilet, radio repeater.
NPS Management Activities	Research, patrols, mitigation, maintenance; no motor vehicle use or pack stock use.	Patrols, research, tours, mitigation, maintenance; no motor vehicle use or pack stock use.



Alternative B



Alternative C - Preferred

RESOURCES STEWARDSHIP—NATURAL AND CULTURAL RESOURCES, ETHNOGRAPHIC RESOURCES—ALL ALTERNATIVES

Mission Goal:

A. Stewardship of cliff dwellings and all other cultural resources balances National Park Service laws and policies with American Indian concerns.

Cultural Resources

Navajo National Monument is listed in the National Register of Historic Places because the monument preserves and interprets nationally significant cultural resources. The monument is also designated a "Vanishing Treasures" park (an initiative designed to address the ongoing loss of architectural resources in the arid west). Cultural resources include the well known villages of Betatakin, Inscription House, and Keet Seel, which represent some of the best preserved examples of Anasazi communities, as well as the lesser known pre-contact structures of Turkey Cave, Snake House, Owl House, and Kiva Cave. The monument also has various examples of petroglyphs and pictographs; a multitude of small, open pre-contact sites that reflect seasonal occupation and use; and a variety of Navajo sites related to domestic, ceremonial, and livestock management activities.

There are also historic structures from the Wetherill era, and potentially historic structures from the early development of the monument during the 1930s and 1940s. The long interaction between man and the land and the influence of human beliefs and actions over time upon the natural landscape have shaped it, forming a cultural landscape. Any potentially significant ethnographic or historic landscapes have yet to be evaluated for National Register eligibility.

Stewardship is the responsible care of the cultural resources entrusted by the people of the United States to the National Park Service. As with all units of the national park system, management of Navajo National Monument's cultural resources is guided by the Organic Act (1916) creating the National Park Service; as well as other federal laws and regulations and National Park Service policies, guidelines, and standards. Any action that affects cultural resources would be undertaken only if it is consistent with the monument's purposes, as well as applicable laws, regulations, policies, guidelines, standards, and this plan.

Major Laws, Regulations, Policies, and Standards

- National Historic Preservation Act of 1966, as amended (16 USC 470)
- Archeological Resources Protection Act of 1979 (16 USC 470)
- Advisory Council on Historic Preservation's implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
- Native American Graves Protection and Repatriation Act (1990)
- *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995)
- Chapter V of the National Park Service's *Management Policies* (1988)
- National Park Service's *Cultural Resources Management Guideline* (Director's Order 28, 1998)
- National Park Service *Management Policies* (2001)

One of the important provisions of the National Historic Preservation Act is that for any action that affects cultural resources either listed on the National Register of Historic Places or eligible to be listed, there must be consultation with the Tribal Historic Preservation Officer (THPO), who is from the Historic Preservation Office of the Navajo Nation, associated tribes including Hopi, San Juan Paiute, and Zuni, and as necessary, the Advisory Council on Historic Preservation and the public.

Actions

For all actions that would affect cultural resources, the THPO and associated tribes would be consulted.

- Develop programmatic agreements between NPS and:
  - THPO (Historic Preservation Office of the Navajo Nation), Hopi, San Juan Paiute, and Zuni regarding the management of cultural resources.
  - Affiliated tribes regarding the Native American Graves Repatriation Act. Agreements will be sought with American Indians linked by ties of kinship or culture to ethnically identifiable sacred objects, objects of cultural patrimony, unassociated funerary objects, or human remains and associated funerary objects, when such objects or remains may be disturbed or are encountered on monument lands in accordance with law and policy.
- Complete surveys and studies:
  - Survey for archeological resources on the headquarters unit.
  - Conduct ethnographic resources inventory.
  - Conduct cultural landscape inventory.
- Evaluate and document the significance of known archeological resources, structures, and landscapes (with consultation with all associated tribes and determination by the THPO) for listing in the National Register of Historic Places; update the list of classified structures as needed.
- Provide stewardship of cultural resources:
  - Protect and preserve archeological resources, structures, and landscapes, unless it is determined through appropriate environmental analysis and consultations with the THPO (Historic Preservation Office of the Navajo Nation), Hopi, San Juan Paiute, and Zuni that either natural deterioration is appropriate or disturbance is unavoidable.

  - Record and document sites and structures if natural deterioration of resources is permitted, or if disturbance of the resources is unavoidable.
  - Prepare historic structure reports, as necessary, to guide future maintenance and/or rehabilitation of historic structures.
  - Undertake preservation, rehabilitation, and restoration, as well as the daily, cyclical, and seasonal maintenance of cultural resources in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties.*
  - Avoid known archeological resources during construction and take appropriate mitigation steps if resources are discovered.
  - Develop a current resources management plan to prioritize and guide research, monitoring, and management.

- American Indians linked by ties of kinship or culture to ethnically identifiable human remains would be consulted when remains may be disturbed or are encountered on monument lands.

Mission Goals:

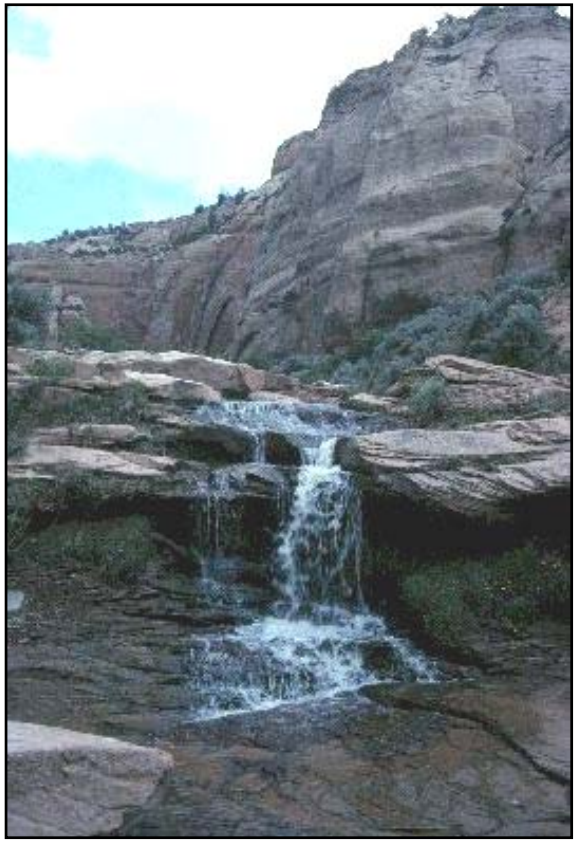
B. Natural resources (processes, systems, and values) are allowed to continue in balance with stewardship of archeological resources and the greater ethnographic landscape.

C. Water quality and quantity, good air quality, species that are threatened, endangered, or of concern, scenic vistas, and natural soundscapes and lightscapes are protected.

Natural Resources

The natural resources of Navajo National Monument include the geology, soils, plants, animals, springs, seeps, streams, and air. While all of these elements are important, the integrity of their interaction as a natural system is vital. The natural resources on the isolated federal tracts of land are surrounded and affected by the management of Navajo Nation land. There are several threatened or endangered species or species of concern in and around the monument. Other key resources include scenic vistas, and natural soundscape and lightscape. Natural resources are also important to the cultural and spiritual lives of associated American Indians (see discussion on “Ethnographic Resources”).

As with all units of the national park system, management of Navajo National Monument’s natural resources is guided by the Organic Act (1916) creating the National Park Service as well as other federal laws and regulations and National Park Service policies, guidelines, and standards. Any action that affects natural resources would be undertaken only if it is consistent with the monument’s purposes, as well as with applicable laws, regulations, policies, guidelines, and this plan.



Major Laws, Regulations, and Policies

- NPS Organic Act of 1916 (16 USC 1)
- National Environmental Policy Act of 1970 (42 USC 4321)
- Endangered Species Act of 1973, as amended (16 USC 1531-1543)
- Bald and Golden Eagles Protection Act, as amended (16 USC 668-668d)
- Executive Order 11987: Exotic Organisms
- Federal Water Pollution Control Act (Clean Water Act), as amended (33 USC 1251)
- Safe Drinking Water Act (42 USC 201)
- Watershed Protection and Flood Prevention Act
- Executive Order 11988: Floodplain Management
- EO 11990: Protection of Wetlands
- Clean Air Act, as amended (42 USC 7401)
- National Park Service *Management Policies* (2001)
- EO 13112: Invasive Species
- 36 CFR 2.1 Preservation of Natural, Cultural, and Archeological Resources

Actions

The general direction of NPS natural resource management is to perpetuate natural systems. Many aspects of natural resource management must be done in consultation with others, including the U.S. Fish and Wildlife Service, the Arizona Fish and Game Department, the Navajo Nation Department of Natural Resources, and associated tribes. Recognizing American Indian people's traditional and cultural relationship to natural environmental resources, Navajo National Monument will consult regularly to incorporate Indian values, ideals, and uses in management of natural resources and environmental awareness programs.

- Continue inventory, monitoring, and research of vegetation and wildlife (including traditional knowledge), develop vital signs research to detect changes.
- Manage for native ecosystem processes
  - Minimize human impacts on native plants, animals, and ecosystems and the processes that sustain them.
  - Use only weed-free feed for pack stock.
  - Remove exotic species using integrated pest management practices
  - Restore native vegetation to federal tracts impacted by livestock and pack stock grazing and trampling.
  - Minimize disturbances and introduction of exotic plants by visitors.
  - Work cooperatively with neighbors and other agencies to control weeds and minimize invasion.
- Identify and protect threatened and endangered species, species of concern, and their habitats in consultation with the U.S. Fish and Wildlife Service, the Arizona Fish and Game Department, the Navajo Nation Department of Natural Resources, and other tribes.
- Study the role of fire in the natural and cultural landscape, and develop a fire management plan in consultation with appropriate neighbors, tribes, and agencies.
- Monitor water quality, groundwater quality and quantity, air quality, natural soundscape, scenic beauty, and lightscapes; seek to protect through consultation and agreements.
- Continue to study and monitor rockfall hazard (which affects visitor safety, cliff dwellings, and other cultural resources) and arroyo erosion, develop strategies to mitigate the impacts of these inevitable events, such as closures for visitor safety or documentation of eroding archeological sites.
- Develop a current resources management plan to identify and prioritize needs for inventory, monitoring, research, and management, in consultation with the public, associated tribes, and agencies.

- Continue and expand cooperative relationships with the NPS Water Resources Division, Glen Canyon National Recreation Area resource management staff, and others in addressing water resource issues.

Ethnographic Resources

Navajo National Monument is within the Navajo Indian Reservation. The associated Hopi, Navajo, San Juan Paiute, and Zuni cultures are inextricably bound to the monument lands, which were occupied by their ancestors. Associated tribes view the park landscape as spiritually active, containing places vital to the continuity of their cultural identity. Navajo National Monument will continue to recognize the past and present existence of peoples in the region and the traces of their use as an important part of the cultural environment to be preserved and interpreted.

Navajo National Monument will continue to provide access to ethnographic resources for traditional cultural purposes through the issuance of special use permits when necessary. Decisions to grant special use permits for access to ethnographic resources will be based on appropriate anthropological studies and consultation.

Actions

- Continue to recognize the past and present existence of peoples in the region and the traces of their use as an important part of the cultural environment to be preserved and interpreted.
- Consult with associated American Indian tribes to develop and accomplish the programs of Navajo National Monument in a way that respects the beliefs, traditions, and other cultural values of the American Indian tribes who have ancestral ties to the monument lands.
- Maintain government-to-government relations with associated American Indian tribes, to ensure a collaborative working relationship prior to taking actions that would affect natural and cultural resources that are of interest and concern to them.
- Accommodate access to Indian sacred sites by Indian religious practitioners in a manner that is consistent with monument purposes and does not interfere with Indian use of traditional areas or sacred resources. Avoid adversely affecting the physical integrity of these sites and resources.
- Conduct appropriate cultural anthropological research in cooperation with (or conducted by) monument-associated Indian tribes.

Major Laws, Regulations, and Policies

- Indian Self-Determination and Education Assistance Act of 1975 (25 USC 450-451n, 455-458e)
- American Indian Religious Freedom Act of 1978 (42 USC 1996)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001-3013)
- Presidential Memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments
- National Historic Preservation Act of 1966, as amended (16 USC 470)
- Archeological Resources Protection Act of 1979 (16 USC 470)
- Advisory Council on Historic Preservation's implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
- Executive Order 13007, May 24, 1996, Indian Sacred Sites
- National Park Service's *Cultural Resources Management Guideline* (Director's Order 28, 1998)
- NPS Organic Act of 1916 (16 USC 1)
- National Environmental Policy Act of 1970 (42 USC 4321)
- National Park Service *Management Policies* (2001)

Resource Stewardship—Natural And Cultural Resources—Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Protect Cliff Dwellings and Environment from Vandalism. • Conduct intermittent year-round NPS patrols at Betatakin, Keet Seel, and Inscription House, observation of Betatakin from rim, ranger stationed at Keet Seel in summer. • Maintain cooperative relationships with neighboring grazing permit holders to assist in preventing unauthorized people from entering park units.	**Protect Cliff Dwellings and Environment from Vandalism.** Continue as in Alternative A, plus increase NPS vigilance: • Establish a ranger station at Inscription House, remote surveillance equipment installed at Betatakin, Keet Seel, and Inscription House • Hire an additional NPS ranger to extend patrol all three sites to year-round protection.	**Protect Cliff Dwellings and Environment from Vandalism.** Same as Alternative B, plus: • Seek cooperative agreements or hire local people to patrol sites. • In cooperation with the Navajo Nation, who has jurisdiction over adjacent lands, establish a guide association to manage appropriate visitor use, develop memorandum of understanding to coordinate permits and manage access. • Seek cooperation from publishers to respect and protect the sensitivity of these sites.
Inventory, Monitoring, Implementation Plans, and Management. • Continue to inventory, monitor, develop implementation plans, and manage natural and cultural resources in consultation with associated American Indian tribes and as funds and staff are available.	**Inventory, Monitoring, Implementation Plans, and Management.** • Hire additional NPS staff to ensure inventory, monitoring, developing implementation plans and management natural and cultural resources in consultation with associated American Indian tribes.	**Inventory, Monitoring, Implementation Plans, and Management.** Same as Alternative B, plus: • Seek cooperative agreements with associated tribes, scientists, and others to develop programs for youth training and internships for stewardship of archeological resources, structures, and cultural landscapes. • Explore agreements with Navajo Nation for collaborative management of natural resources.
Prevent Exotic Weeds from Contaminating Pack Stock. • Use only weed-free feed for NPS pack stock supplying backcountry.	**Prevent Exotic Weeds from Contaminating Pack Stock.** Same as Alternative A, plus: • Improve barriers to livestock on federal units.	**Prevent Exotic Weeds from Contaminating Pack Stock.** Same as Alternative B, plus: • Exclude pack stock from the federal backcountry tracts • Encourage partnerships that require future guide services to use weed-free feed for pack stock.

RESOURCE STEWARDSHIP—MUSEUM COLLECTION—ALL ALTERNATIVES

Mission Goal:

D. Museum collection of artifacts and archives are properly inventoried, cataloged, stored, and secured, and through consultation with affiliated American Indian tribes, appropriate items are repatriated.

Artifacts and Archives in Museum Collection

Thousands of objects, artifacts, and natural history specimens, as well as archival and manuscript material, make up the Navajo National Monument museum collection and are among the monument resources to be preserved and protected. Much of the collection was amassed from the early era of the monument when excavations occurred. Current policies direct that archeological artifacts be protected in place, unless disturbance can be clearly justified. New artifacts may come into the collection from erosion, construction disturbance, natural history specimens, or archives.

Nearly 50 percent of the collection has yet to be cataloged, and significant portions of the collection are housed in various facilities, including Navajo National Monument, the National Park Service's Western Archeological Conservation Center, the Museum of Northern Arizona, and 15 other known institutions.

Many of the artifacts collected were treated with toxic chemicals to preserve them and are hazardous to NPS employees as well as to tribal members who are interested in repatriation.

Actions

- Inventory and catalog all museum collections in accordance with standards in the National Park Service's *Museum Handbook*.
- Consult with affiliated Indians, regarding each acquisition that involves Native American human remains, associated or unassociated funerary objects, sacred objects, or objects of cultural patrimony, and facilitate appropriate repatriation.
- Prepare and implement a collection management program, according to National Park Service standards, to guide protection, conservation, and use of museum objects.
- Accession and catalog all objects. Survey, accession, catalog, arrange, and describe archival and manuscript material and produce finding aids.
- Ensure that objects housed in repositories/institutions outside the monument are preserved, protected, and documented according to National Park Service standards and procedures.

Major Laws, Regulations, and Policies

- NPS Organic Act of 1916 (16 USC 1)
- Antiquities Act of 1906 (16 USC 431-433)
- Museum Properties Act of 1955
- National Historic Preservation Act of 1966, as amended (16 USC 470)
- Archeological Resources Protection Act of 1979 (16 USC 470)
- Advisory Council on Historic Preservation's implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800)
- National Park Service's *Cultural Resources Management Guideline* (DO-28, 1996)
- National Park Service's *Museum Handbook*
- Native American Graves Protection and Repatriation Act (1990)
- Presidential Memorandum of April 29, 1994, entitled "Government-to-Government Relations with Native American Tribal Governments"
- National Park Service *Management Policies* (2001)

Resource Stewardship—Museum Collection—Alternatives

ALTERNATIVE A: Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Location of Collection. Continue to leave majority of collection at Western Archeological Conservation Center (WACC in Tucson) and several other known institutions.	**Location of Collection.** Same as Alternative A.	**Location of Collection.** Pursue the consolidation of the collections at Western Archeological Conservation Center (WACC in Tucson) and several other known institutions to either WACC or another regional NPS curatorial facility. Factors to determine the best location include secure protection of items, American Indian concerns, accessibility to researchers and park staff, and cost.
Storage/Workspace at Monument. Continue limited, scattered storage that does not meet NPS standards.	**Storage/Workspace at Monument.** Develop a curatorial workspace and small, secure climate-controlled storage facility at headquarters to catalog, treat, and store a select number of objects, artifacts, natural history specimens, and archives. The purpose of this small repository would be to store items for rotation into displays in the visitor center and storage of natural history specimens. Most items would eventually be sent to currently used institutions for permanent storage.	**Storage/Workspace at Monument.** Same as Alternative B, except most items would eventually be sent on to permanent storage at the consolidated location selected. In addition, some extra curatorial storage space would be constructed for holding tribal items in transition to repatriation.
Visitor Center Exhibits. Continue to display limited number of objects and artifacts in the existing visitor center facility, which does not meet NPS standards for protection.	**Visitor Center Exhibits.** Develop secure and climate-controlled display area for selected artifacts in the expanded visitor center space.	**Visitor Center Exhibits.** Same as Alternative B.
Curatorial Staff. Continue as an extra duty assigned to a seasonal employee.	**Curatorial Staff.** Add a professional curator to NPS staff.	**Curatorial Staff.** Same as Alternative B.

VISITOR UNDERSTANDING—INTERPRETATION—ALL ALTERNATIVES

Mission Goal:

E. Visitors understand and appreciate native and other cultures of this region through time.

Broaden Interpretive Stories

Strong interest in ancient cliff dwellings draws people to the monument, providing an opportunity to introduce visitors to an expansive perspective. People will have opportunities to learn about the entire rich tapestry of cultures that have been woven into the canyon environments for more than a thousand years. Whether people are visiting for a short time on the mesa and rim or spending more time to camp and hike to Betatakin or Keet Seel, interpretation will be broadened to offer more diverse viewpoints. Themes would include the adaptation of people to their environment, the complex culture reflected by the details of the cliff dwellings, natural systems and processes and the interaction of humans, and the connections of the cliff dwellings to other cultures and other times.

One-third of all visitors to Navajo National Monument are from foreign countries. Additionally, many local people speak primarily native languages, which are not commonly written. There is a need for multiple translations in order to have meaningful interpretation as well as to communicate important messages concerning resource protection and safety.

Actions

- Consult with Hopi, Navajo, San Juan Paiute, and Zuni tribal members to strengthen the content of programs, wayside signs, brochures, video, and exhibits. In some cases, multiple and overlapping interpretations will be provided side-by-side, without attempts to combine or judge them.
- Strive to involve American Indian tribes and groups in the park's interpretation program to promote the accuracy of information presented regarding American Indian cultural values and to enhance public appreciation of those values.
- Seek to participate as partners with associated Indian tribes, in planning for and conducting projects and initiatives that enhance the quality of the experiences of visitors to the monument or that enhance the levels of public appreciation of the monument's resources and values.
- Expand the availability of translations of publications, exhibits, and programs into other languages.

> *Interpretation—an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information.*
>
> *—Freeman Tilden, National Park Service*

MAJOR LAWS, REGULATIONS, AND POLICIES

- NPS Director's Order 6 (DO-6), *Interpretation*
- National Park Service *Management Policies* (2001)

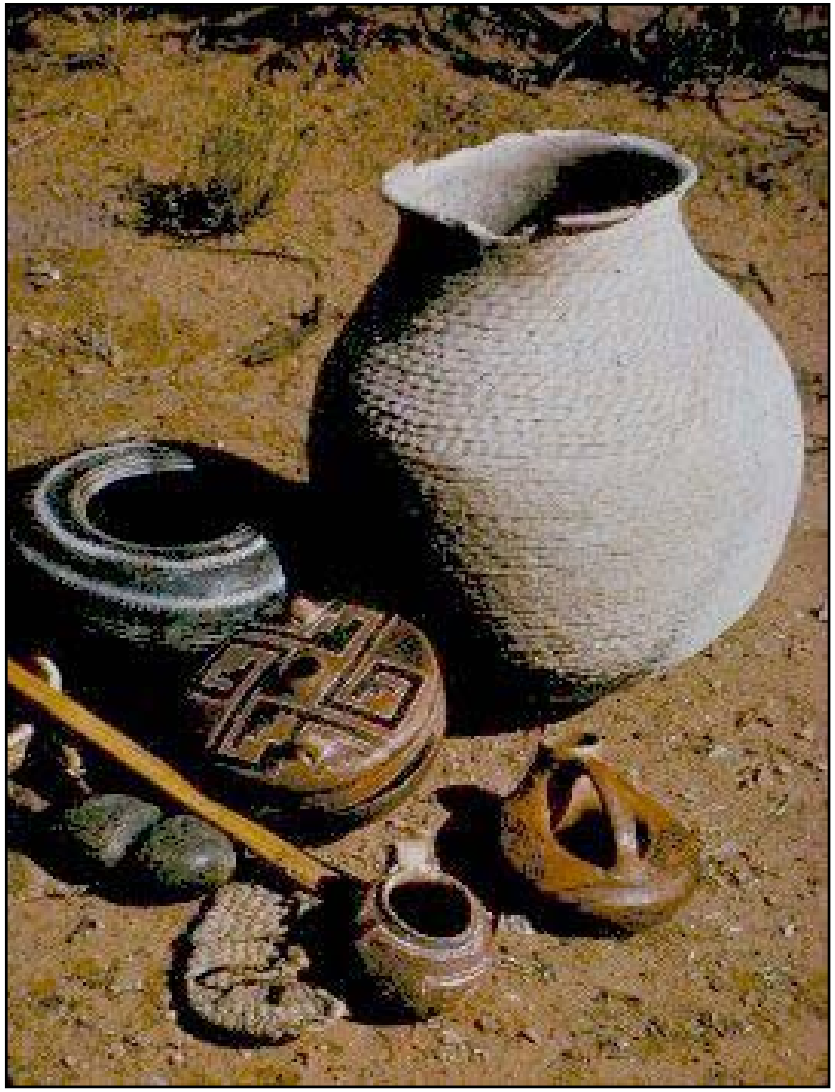
VISITOR UNDERSTANDING—FRONT COUNTRY EXPERIENCE—ALTERNATIVES

Mission Goal

> F. A range of experiences are provided to promote visitor understanding of the resourcefulness of the 13th-century cliff dwelling builders, the wholeness of the environment, connections to other cultures, and spiritual values.

Visitor Understanding on the Mesa

How will most visitors, who only stay a short time on top of the mesa, understand what is important about Navajo National Monument? Most visitors are on their way to another destination and stay less than three hours. They go to the visitor center and hike the short Sandal Trail to view Betatakin across the canyon. Distance and time deter most visitors from Betatakin and Keet Seel tours. Even if many more were convinced to commit to the hike, fragile resources are unable to withstand too much visitation. The mesa top and canyon rim will continue to provide the main opportunity for visitor understanding. The alternatives vary in how those opportunities are provided.



Visitor Understanding—Front Country Experience—Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Visitor Center. Continue to maintain existing visitor center; update exhibits and audio-visual programs as funds allow.	**Visitor Center.** Expand existing visitor center to provide improved audio-visual programs and exhibits that would emphasize cultures and broader themes outlined in the introduction. Real-time videos of tours at cliff dwellings would bring the resource closer.	**Visitor Center** Remodel existing visitor center, similar to Alternative B, but with an emphasis on fostering interaction between visitors, interpreters, and partners. In addition: • Increase the direct involvement of Hopi, Navajo, San Juan Paiute, and Zuni in the interpretation and programs at the visitor center, terrace, trails, and overlooks. • Re-establish American Indian craft demonstrations, skills, and other special events on the patio. A funding source would be sought to support this activity and not compete with the established arts and crafts shop.
Trails, Overlooks, and Outdoor Exhibits. Continue to maintain existing trails; make minor improvements as funds allow.	**Trails, Overlooks, and Outdoor Exhibits.** Expand and improve outdoor exhibits to more completely illustrate Navajo life past and present. Hopi, Navajo, San Juan Paiute, and Zuni Tribes would be consulted during the development of these improvements. Develop extensive additional trails, wayside exhibits, and overlooks. Vistas and high points would be used to interpret broader themes identified in the introduction.	**Trails, Overlooks, and Outdoor Exhibits.** Develop additional trails, waysides, and overlooks as in Alternative B, but not quite as extensive.
	Interpretive Staff. Provide additional NPS permanent interpreter to inform visitors at the visitor center and provide roving programs on the expanded trails.	**Interpretive Staff.** Emphasize recruitment of associated American Indian tribal members for seasonal interpreter jobs and support with necessary housing.

VISITOR UNDERSTANDING—BACKCOUNTRY EXPERIENCE—ALL ALTERNATIVES

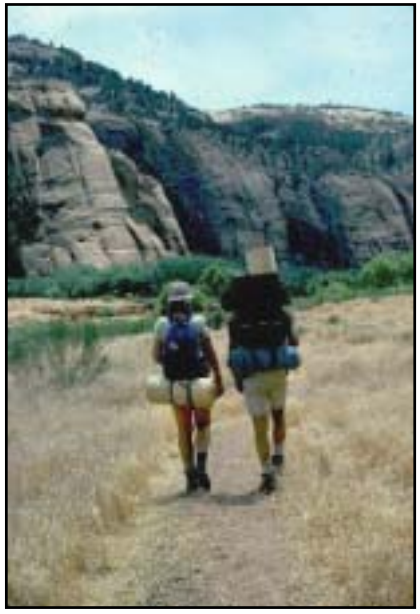
Mission Goal:

G. Protect the remoteness that has kept the ancient dwellings in such pristine condition and that fosters within visitors an element of mystique and desire to explore and understand the wholeness of the landscape and peoples.

Access to Betatakin, Keet Seel, and Inscription House

One of the special qualities of Navajo National Monument identified by visitors and public response to this plan is the remoteness that has protected the outstanding condition of the cliff dwellings, offers a quiet setting evoking the past, and is unlike many drive-up tourist attractions. The guided tour by an NPS ranger, often a young local Navajo, offers unparalleled opportunities to discuss the ancient villages, cultures, migrations, flowers, wildlife, and Navajo life today. This unforgettable experience fosters deep understanding.

The ancient village sites are very fragile and cannot withstand much foot traffic. Inscription House was closed to the general public in 1968 because it was determined to be too delicate to host visitors. Individuals may apply to the Superintendent for a special use permit to enter NPS land (but not the town site or structures) for specific activities that are not injurious to park resources. Anyone not enrolled in the Navajo Nation is required to also get a permit from the Navajo Nation to cross Navajo lands to get to the federal unit. The current *Backcountry Management Plan* (1995) for



Navajo National Monument set a maximum capacity of 1,500 visitors per year for Keet Seel and limits Betatakin to a maximum of 25 people per day on one guided hike. In the summer of 2000, tours to Betatakin were limited to the front of the village rather than inside. The closure was to protect visitor safety—major rockfall within the alcove is possible and unpredictable.

The hike to Betatakin is 2½ miles each way over Tsegi Point and into the canyon. Currently, there is one guided tour per day for up to 25 people during the summer months, and it takes about five hours. Keet Seel is 8½ miles each way, and people usually backpack and stay overnight. Up to 20 permits per day are issued in the summer months, and a ranger stationed at the sites gives guided tours. Most of trails to these sites are situated upon Navajo Nation lands and cross private areas of land held under individual grazing permits.

Earlier draft alternatives presented in a newsletter for this *General Management Plan* offered greater visitor access to Betatakin by reopening the Aspen Forest Trail. Later study has revealed that at present there are no safe, practical routes down the head of the canyon. Reopening Aspen Forest Trail may be considered in the future, but will require further

study of safety and environmental analysis of potential impacts.

Actions

- Continue to guide all visitors who go to the ancient villages to provide firsthand understanding and to protect fragile resources.
- Continue access to Betatakin via the Tsegi Point route. Keep visitors outside of the alcove for safety and resource protection.
- Develop a new backcountry management plan (BMP) to further refine carrying capacity. It will tier off of the direction set in this *General Management Plan*. In the interim, the maximum capacities in the existing BMP will remain in place. The new BMP will involve further public input and will be developed in consultation with associated American Indian tribes. It will reevaluate carrying capacities by identifying sensitive resources, determining levels and types of use that protect natural and cultural resources and visitor experience, and selecting indicators to monitor impacts and manage to prevent any harm.
- The National Park Service will not allow visitor access to backcountry federal property by mountain bikes, pack stock, motorized vehicles, or other wheeled conveyances, because of the fragility of natural and cultural resources. Alternative access would involve primarily tribal lands. If the Navajo Nation seeks to increase access by initiating jeep tours, electric vehicles, horse tours, mountain bikes, or developing roads on tribal land, the National Park Service will continue to manage visitation to Betatakin, Keet Seel, and Inscription House within carrying capacities identified in the *Backcountry Management Plan.*

MAJOR LAWS, REGULATIONS, AND POLICIES

- National Parks and Recreation Act, November 1978, 16 USC 1
- Title 36 of the Code of Federal Regulations
- National Park Service *Management Policies* (2001)

Visitor Understanding—Backcountry Experience—Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Visitor season. May 31 through September 1.	**Visitor Season.** Extend season to March 1 through October 31, pending available staff and demand.	**Visitor Season.** Same as Alternative B.
Carrying Capacity. Keep levels of use to within existing *Backcountry Management Plan,* pending new carrying capacity studies and a new	**Carrying Capacity.** Same as Alternative A.	**Carrying Capacity.** Same as Alternative A.

Visitor Understanding—Backcountry Experience—Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
backcountry management plan.		
Betatakin. One tour per day, up to 25 people, first-come, first-served, ranger-led hike. Visitors not allowed within alcove.	**Betatakin** Change to a permit system, allow hikers (within carrying capacity) to go independently into canyon over Tsegi Point, monitored by an NPS ranger patrol. Guided tour by NPS ranger from boundary to Betatakin. Visitors not allowed within alcove.	**Betatakin.** Continue guided tour in groups no larger than 25, but increase number of tours per day (up to four, pending available staff and demand). Visitors not allowed within alcove.
Keet Seel. Up to 20 people per day by reservation and permit, primarily overnight backpack, ranger-led tour. Visitors allowed in limited area of village with guide.	**Keet Seel.** Same as Alternative A, plus move campsite within NPS boundary. Visitors not allowed within alcove.	**Keet Seel.** Same as Alternative A, except closely monitor potential impacts of guided visitors within limited area of village and limit further or close if necessary.
Inscription House. Remains closed to the general public. Other activities require a special use permit and permit from Navajo Nation.	**Inscription House.** Establish limited guided tours to front of (but not inside) Inscription House, pending access agreements with adjacent grazing permit holders. Other uses as in Alternative A.	**Inscription House.** Same as Alternative B.
Off-Site Interpretation. For visitors who do not go to the backcountry, there is limited interpretation of the remote sites at the visitor center.	**Off-Site Interpretation.** Improve interpretation at enlarged visitor center for Betatakin, Keet Seel, and Inscription House, such as real-time cameras.	**Off-Site Interpretation.** Improve interpretation at remodeled visitor center for Betatakin, Keet Seel, and Inscription House, such as real-time cameras.
Tour Guides. Seasonal NPS employees, many local Navajo young people.	**Tour Guides.** Seasonal NPS employees, many local Navajo young people.	**Tour Guides.** Recruit Hopi, Navajo, San Juan Paiute, and Zuni tour guides, provide multiple interpretations.
Alternative Access. As proposals are made by the Navajo Nation for motorized or pack stock tours over tribal lands to the remote NPS sites, work with the tribe to minimize impacts.	**Alternative Access.** Same as Alternative A.	**Alternative Access.** Work proactively with neighbors and the Navajo Nation to determine appropriate potential alternative visitor access over tribal land to Betatakin, Keet Seel, and Inscription House, which will protect resources and promote visitor understanding.

The name "Navajo National Monument" *is considered by some to obscure the significance of the resources and cause misunderstanding. While the monument is located within the Navajo Nation and surrounded by Navajo people, the area is also associated with the Hopi, San Juan Paiute, and Zuni (discussed in the introduction). Further, there is often visitor confusion from the similarly named "Monument Valley Navajo Tribal Park," owned and managed by the Navajo Nation.*

The name "Navajo National Monument" was assigned under the presidential proclamation of 1909 that designated the monument, administered by the National Park Service. It would require an act of Congress or another Presidential Proclamation to change the name. Such an act usually begins as a bill sponsored by the local U.S. representatives and/or U.S. senators in response to a proposal widely supported by constituents.

Visitor Understanding—Name Of The Monument—Alternatives

ALTERNATIVE A: NO ACTION **Continue Existing Management**	**ALTERNATIVE B:** **Focus on NPS Land**	**ALTERNATIVE C: PREFERRED** **Emphasize Partnerships**
Keep the name "Navajo National Monument."	Work with consultation committee of associated American Indian Tribes to determine and agree on a name that: • Reflects the cultural affiliation of the builders and inhabitants of the cliff dwellings • Reflects the broader themes of native cultures through time If associated tribes agree on a new name, support them in seeking legislation to change.	Same as Alternative B.

PROMOTE VISITOR UNDERSTANDING—OPPORTUNITIES FOR PEOPLE WITH DISABILITIES—ALL ALTERNATIVES

Mission Goal:

H. Opportunities for people with disabilities are expanded and improved.

Accessibility for Disabled Persons

Every reasonable effort will be made to make facilities, programs, and services of the National Park Service accessible to and usable by all people (visitors and employees), including those who have disabilities. Major visitor facilities such as the visitor center, terrace, picnic sites, and two campsites are handicapped accessible. The video program in the visitor center is captioned. The maintenance area and housing are not accessible.

Actions

- Continue to improve interpretive programs with opportunities for a full spectrum of disabilities, including mobility, hearing, sight, and mental impairments.
- All rehabilitation of existing and construction of new facilities will provide reasonable accommodation for people with disabilities.

Major Laws, Regulations, and Policies

- Americans with Disabilities Act (42 U.S.C. § 12101)
- Architectural Barriers Act (42 U.S.C. 4151 et seq.)
- Rehabilitation Act (29 USC 701 et seq.)

Promote Visitor Understanding—Opportunities For People With Disabilities—Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Visitor Center. Accessible facilities include the visitor center and rest rooms, the outdoor patio and adjacent exhibits. The movie is close-captioned for the hearing impaired.	**Visitor Center.** A remodeled and expanded visitor center and outdoor exhibits would meet or exceed requirements for access for people with disabilities. Programs, exhibits, audio-visual program, and wayside signs would be developed to address the needs of people with mobility, hearing, vision, and mental impairments. Real-time camera would bring cliff dwelling tours to the mesa top.	**Visitor Center.** Same as Alternative B.
Campground and Picnic Area. One picnic site and one campsite are accessible; the campground rest room is not.	**Campground and Picnic Area.** More picnic sites, campsites, and the campground rest room would be made accessible.	**Campground and Picnic Area.** Same as Alternative B.
Front Country Trails. The Aspen Forest Overlook and Sandal Trail have many grades in excess of 12%, not much below the 5% considered accessible to most people with mobility impairments.	**Front Country Trails.** Many of the new front country overlooks and trails would meet or exceed requirements for access for people with disabilities.	**Front Country Trails.** Same as Alternative B.
Operations and Administration. Offices at headquarters, employee housing, and the maintenance area are not accessible.	**Operations and Administration.** Remodeled and new administrative space, new employee housing, and new maintenance facilities would be accessible.	**Operations and Administration.** Same as Alternative B.
Other. As funding allows, improvements would continue to be made, such as the campground rest room or more picnic sites.	**Other.** Improvements would continue to be made as facilities are rehabilitated, such as the maintenance area.	**Other.** Partnerships may be able to provide opportunities for the disabled into the backcountry through guides, horseback, or compatible vehicles.

PROMOTE VISITOR UNDERSTANDING OPPORTUNITIES FOR YOUTH—ALL ALTERNATIVES

Mission Goal:

I. Opportunities for youth to gain understanding about the monument as well as participate in its management are expanded and improved.

Promote Visitor Understanding—Opportunities for Youth—Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Visitor Center. There are no special accommodations for youth. About 13 percent of visitors are youth.	**Visitor Center.** Design new exhibits, indoors and out, with youth and classrooms in mind.	**Visitor Center.** Same as Alternative B.
Programs. There is no school outreach program at the present time. Programs may be developed if there is interest or if funds allow.	**Programs.** Develop programs and materials to travel to schools. Consult with Hopi, Navajo, San Juan Paiute, and Zuni and others, regarding appropriate content and type of programs and materials. Strive to develop format that will help schools fulfill standards.	**Programs.** Develop partnerships with associated tribes and others to design programs and materials for youth for use at the monument, schools, or other locations. Use the expanded staff and partnerships to host school programs at the monument and travel to schools. Establish a youth intern program and support system (facilities and staff) to attract Hopi, Navajo, San Juan Paiute, and Zuni young people to train in interpretation, resource management, maintenance, and park management. Seek grants and partnerships to support programs.

PARTNERSHIPS—ALL ALTERNATIVES

Mission Goals:

J. Good relationships with all associated American Indian groups are developed and maintained.

K. American Indian tribes are involved in the interpretation and management of resources.

Major Laws, Regulations, and Policies

- Indian Self-Determination and Education Assistance Act of 1975 (25 USC 450-451n, 455-458e)
- American Indian Religious Freedom Act of 1978 (42 USC 1996)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001-3013)
- Presidential Memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments

Partnerships - Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Government-to-Government Relations. Continue to consult with individual associated American Indian tribes when the need arises.	**Government-to-Government Relations.** Continue to consult with individual associated American Indian tribes on a regular basis. **Consultation Committee.** Establish an American Indian consultation group for Navajo National Monument that is consistent with "Government-to-Government Relations with Native American Tribal Governments." The group would be representative of associated Hopi, Navajo, San Juan Paiute, and Zuni and would include appropriate departments of the Navajo Nation as well as representation at the chapter house level. Convene at least once per year, or other agreed-upon schedule. Discuss full range of issues and concerns, including but not limited to resource management, prevention of vandalism, ethnographic resources, NAGPRA, interpretation for visitors, visitor access, school outreach, park management, and staff opportunities.	**Government-to-Government Relations.** Same as Alternative B. **Consultation Committee.** Establish consultation group, same as Alternative B.

Partnerships - Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
		Partnerships. Seek additional agreements and partnerships, such as: • Involve local people in patrol of sites to prevent vandalism. • Establish a guide association. • Develop internship program for American Indian youth. • Tribal management of a component of the monument, such as interpretation, resource management, or maintenance. • Seek funding sources, establish foundation or trust. • Develop and provide educational programs on and off site. • Seek universities and organizations for research opportunities. • Improve road signs in region. • VIP campground host. • Collect fees and reinvest in resource protection or visitor facilities and services. • Work with regional tourism groups to motivate people to explore region. • Reinstate craft demonstrations. • Develop cross-jurisdiction for law enforcement. • Seek alternatives to provide housing for additional staff, interns, and volunteers. • Seek variety of funding sources for facilities needed for visitors, administration, or other needs identified in this plan. • Seek partnership with Arizona Highway Department and Navajo Nation to protect outstanding vistas on entrance road to monument.

Partnerships - Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
		• Continue and expand cooperative relationships with the NPS Water Resources Division, Glen Canyon National Recreation Area resource management staff, and others in addressing water resource issues. **This list is not all-inclusive. Additional opportunities for partnerships will be sought.**

FACILITIES AND OPERATIONS—FACILITIES—ALL ALTERNATIVES

Mission Goal:

L. Safe, quality, sustainable facilities fulfill desired visitor experience and support maintenance and administration.

Navajo National Monument would strive to incorporate the principles of sustainable design and development into all facilities. Sustainable practices minimize the short- and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy efficient and ecologically responsible materials and techniques.

The National Park Service's *Guiding Principles of Sustainable Design* (1993) provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of bio-diversity, and encourages responsible decisions. The guidebook articulates principles to be used in the design and management of visitor facilities that emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings. The National Park Service also reduces energy costs, eliminates waste, and conserves energy resources by using energy efficient and cost effective technology. Energy efficiency is incorporated into the decision-making process during the design or acquisition of structures.

In response to public concern about the cost of government employee housing and the ongoing critical need to provide housing at remote locations such as Navajo National Monument, the Department of Interior has a service-wide process in place, The National Parks Housing Needs Assessment. This process provides service-wide consistency in analyzing the number of housing units needed based on the local market for housing, remoteness, the need to have employee residents to provide resource protection and service, condition of existing housing, and potential business partnerships.

Major Laws, Regulations, and Policies

- National Park Service *Management Policies* (2001)
- *Guiding Principles of Sustainable Design* (1993)
- Federal Employees and Facilities Act (5 U.S.C. 5911)
- Office of Management and Budget Circulars A-18, A-25, and A-45
- Department of Interior regulations
- Government Furnished Housing Guidelines (DO-36)

Actions:

- Navajo National Monument would work with appropriate experts to make the monument's facilities and programs sustainable. Value analysis and value engineering, including life cycle cost analysis, would be performed to examine energy, environmental, and economic implications of proposed development. In addition, facilities would be harmonious with monument resources, compatible with natural process, aesthetically pleasing, functional, and as accessible as possible to all segments of the population.

- Develop architectural character guidelines for remodeled and new structures.
- Support and encourage suppliers, permittees, and contractors to follow sustainable practices.
- Address sustainable park and out of park practices (such as recycling) in interpretive programs.
- Continue to work through the National Park Housing Needs Assessment Process to ensure safe, quality, cost-effective housing is provided when essential for accomplishment of park objectives.
- Identify specific needs to accomplish GMP in "Alternatives" section of this plan.

Facilities And Operations—Facilities—Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Visitor Center. Maintain existing visitor center (5,000 SF), improve exhibits and audio-visual programs as possible.	**Visitor Center.** Remodel or expand visitor center (5,000–6,000 SF), new exhibit and audio-visual program, expand outdoor exhibits.	**Visitor Center.** Remodel visitor center (5,000 SF) with an emphasis on fostering interaction between visitors, interpreters, and partners, new exhibit and audio-visual program.
Front Country Trails. Maintain existing Sandal and Aspen Forest Overlook trails (1.5 miles).	**Front Country Trails.** Maintain existing trails, plus increase front country trails (to 5 or 6 miles), add overlooks, wayside exhibits, benches, shade structures, and rest rooms.	**Front Country Trails.** Maintain existing trails, plus increase front country trails (to 4 miles), add overlooks, wayside exhibits, benches, shade structures, and rest rooms.
Campground and Picnic Area. Maintain existing facilities.	**Campground and Picnic Area.** Maintain and improve existing facilities for accessibility.	**Campground and Picnic Area.** Same as Alternative B.
Backcountry Facilities. Maintain existing facilities: • Keet Seel ranger station, composting toilet, picnic area, campground (outside boundary) • Betatakin composting toilet	**Backcountry Facilities.** Maintain existing facilities as in Alternative A, plus: • Keet Seel—move campground inside boundary • Betatakin—add ranger cache • Inscription House—add ranger station	**Backcountry Facilities.** Maintain existing facilities as in Alternative A, plus: • Betatakin—add ranger cache • Inscription House—add ranger station
Administrative Offices. Maintain existing inadequate space at visitor center and miscellaneous structures.	**Administrative Offices.** Reduce office space at headquarters for enlarged visitor area, construct new administration building (3,000 SF).	**Administrative Offices.** Reduce office space at headquarters for enlarged visitor area; construct new administration building (3,500SF).

Facilities And Operations—Facilities—Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Curatorial Workspace and Storage. Continue inadequate storage at visitor center closet.	**Curatorial Workspace and Storage.** Construct curatorial storage and workspace (1,000 SF) in conjunction with new administration building.	**Curatorial Workspace and Storage.** Construct curatorial storage (including temporary holding for some tribal repatriation items) and workspace (1,500SF) in conjunction with new administration building.
Maintenance and Utilities. Maintain existing facilities.	**Maintenance and Utilities.** • Fire truck storage (2,500 SF). • Shop bays (four). • Vehicle storage shelter (eight). • Back-up well. • Rehabilitate sewage system.	**Maintenance Facilities.** Same as Alternative B.
NPS Employee Housing. Maintain existing housing (seven units); pursue additional housing through NPS Housing Initiative.	**NPS Employee Housing.** Maintain existing housing, plus one new duplex and one new 4-plex structure.	**NPS Employee Housing.** Same as Alternative B, plus trailer pads for volunteer campground hosts, researchers, or other partners. Also pursue agreements with Shonto or Kayenta for shared housing for volunteers, interns, and partners.
Estimated Design and Construction Costs. Ongoing repair/rehabilitation projects: $2,250,000 No new major construction.	**Estimated Design and Construction Costs.** Remodel/expand visitor center $800,000 – 1,300,000 New visitor center exhibits/audio-visual $1,100,000 – 1,600,000 New trails, front country and backcountry $800,000 - $1,100,000 New wayside exhibits $140,000 - $190,000 New administration/curatorial building $1,000,000 - $1,500,000 Employee housing $700,000	**Estimated Design and Construction Costs.** Remodel/expand visitor center $800,000 New visitor center exhibits/audio-visual $1,000,000 - $1,100,000 New trails, front country and backcountry $500,000 - $700,000 New wayside exhibits $110,000 - $140,000 New administration/curatorial building $1,200,000 - $1,450,000 Employee housing $700,000

Facilities And Operations—Facilities—Alternatives

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
	Additional maintenance facilities $900,000 Utility improvements $350,000 - $900,000	Additional maintenance facilities $900,000 Utility improvements $350,000 - $900,000
TOTAL NET: $2,250,000	**TOTAL NET (average) $6,900,000**	**TOTAL NET (average) $6,100,000**

How Development Costs Were Calculated For GMP

NET CONSTRUCTION FOR FACILITIES (buildings, roads, utilities, trails, etc.)

Unit cost based on the *National Park Service Cost Estimating Guide with Class C cost Data for New Construction*, 2001

- Location factors used
  - Intermountain Region X 1.0
  - Navajo National Monument X 1.05
- General Conditions 5%
- Contingencies 15%

NET CONSTRUCTION FOR INTERPRETIVE MEDIA (Exhibits, waysides, audio-visual programs and equipment)

Estimated by National Park Service Harpers Ferry Center, 2001

Net costs of development are shown in this plan and are inclusive of the factors above. For implementation, there are additional costs for construction supervision, construction contingencies, and various design services shown below.

Additional Costs for Implementing Construction in the National Park Service (for facilities and interpretive media)

GROSS CONSTRUCTION COST	
Construction Supervision	8% (net)
Construction Contingencies	10% (net)
TOTAL PROJECT COST	
Pre-Design Services	5% (net)
Supplemental Services	2% (net)
Design Services	10% (net)

FACILITIES AND OPERATIONS—BOUNDARY MODIFICATIONS—ALL ALTERNATIVES

Mission Goal:

M. An adequate land base and agreements ensure visitor access and administration.

- National Parks and Recreation Act, November 1978, 16 USC 1.
- Public Law 101-628, Section 1216 (1990)
- National Park Service *Management Policies* (2001)

Facilities and Operations—Boundary Modifications—Alternatives

ALTERNATIVE A: NO ACTION
Continue Existing Management

Headquarters Unit.

Review and revise Memorandum of Understanding with Navajo Nation regarding land at headquarters to reflect current interests and concerns.

Access over Tribal Land.

Develop agreements with Navajo Nation and/or local governments to ensure visitor and administrative access to backcountry sites while minimizing intrusion to local grazing permit holders, other archeological sites, and allowing NPS maintenance.

- Betatakin—routes for visitors and administration.
- Keet Seel—routes for visitors and administration, primitive campground.
- Inscription House—routes for administration.

ALTERNATIVE B:
Focus on NPS Land

Headquarters Unit.

Seek transfer of headquarters unit from Navajo Nation to NPS by purchase or exchange only with agreement and endorsement by Navajo Nation.

Access over Tribal Land.

Develop agreements similar to Alternative A:

- Betatakin—routes for visitors and administration.
- Keet Seel—routes for visitors and administration.
- Inscription House—routes for visitors and administration.

ALTERNATIVE C: PREFERRED
Emphasize Partnerships

Headquarters Unit.

Same as Alternative B.

Access over Tribal Land.

Develop agreements or conservation easements:

- Betatakin—routes for visitors and administration.
- Keet Seel—routes for visitors and administration, primitive campground, guided visitor staging area.
- Inscription House—routes for visitors and administration, explore partnership with Navajo Park and Recreation Department to develop parking and access to Inscription House.

Resource Protection.

Seek agreements or conservation easements for protection of cultural resources on adjacent tribal lands and to provide a buffer to sensitive monument resources.

Proposed addition of headquarters unit. The proposed addition of the headquarters unit in Alternatives B and C is considered a boundary adjustment, and subject to specific criteria are used by the National Park Service found in Appendix E: Proposed Boundary Adjustment. While transferring this 240-acre unit to the NPS is recommended, it would only be sought if it was endorsed by the Navajo Nation. If agreed to, legislation would be required for authorizing the addition. If it is not transferred, Alternatives B or C could still be implemented.

FACILITIES AND OPERATIONS—STAFF—ALL ALTERNATIVES

Mission Goal:

N. Recruit and retain local American Indian employees to provide broader perspectives on management and enrich visitor understanding.

Facilities And Operations—Staff—ALL ALTERNATIVES

ALTERNATIVE A: NO ACTION Continue Existing Management	ALTERNATIVE B: Focus on NPS Land	ALTERNATIVE C: PREFERRED Emphasize Partnerships
Recruitment. Continue to recruit local employees and provide training and incentives to remain.	**Recruitment.** Same as Alternative A, plus when filling new additional positions, seek to supplement staff with Hopi, San Juan Paiute, and Zuni tribal members.	**Recruitment.** Same as Alternative B, plus recruit diverse student interns, partners, volunteers.
Staff Size. • 11 permanent jobs • 11 seasonal jobs	**Staff Size.** • 16 permanent jobs • 14–16 seasonal jobs	**Staff Size.** • 16 permanent jobs • 15–17 seasonal jobs
	Additional Staff Positions. • Law enforcement ranger • Administrative clerk • Seasonal interpretive rangers • Seasonal resource technicians • Seasonal maintenance worker	**Additional Staff Positions.** • Law enforcement ranger • Administrative clerk • Seasonal interpretive rangers • Seasonal resource technicians • Seasonal maintenance worker
	New Staff Positions. • Interpretive ranger • Park resource manager • Natural resource specialist • Preservation specialist • Curator (shared position)	**New Staff Positions.** • Management assistant to develop partnerships • Park resource manager • Natural resource specialist • Preservation specialist • Curator (shared position)
Estimated Annual Operating Cost. • $750,000	**Estimated Annual Operating Cost.** • $1,140,000	**Estimated Annual Operating Cost.** • $1,190,000

Summary of Alternatives

Topic	**ALTERNATIVE A: NO ACTION Continue Existing Management**	**ALTERNATIVE B: Focus on NPS LAND**	**ALTERNATIVE C: PREFERRED Emphasize Partnerships**
CULTURAL RESOURCES	• Protect for future generations • Consult with tribes • Repatriate artifacts through NAGPRA	• Same as Alternative A, plus additional NPS ranger patrol to prevent vandalism • Improve on-site care of artifacts	• Same as Alternative A, plus additional NPS ranger patrol to prevent vandalism • Seek agreements and partnerships to prevent vandalism • Improve on-site care of artifacts, provide holding space for tribes, and consolidate most of collection at WACC or MNA
NATURAL RESOURCES	• Enable natural systems, promote native species, protect threatened and endangered species, encourage appropriate scientific research	• Same as Alternative A, with additional NPS natural resource staff to accomplish goals	• Same as Alternative A, plus additional NPS natural resource staff and partnerships to accomplish goals
ETHNOGRAPHIC RESOURCES	• Same as for cultural and natural resources above • Access for traditional cultural purposes will continue through the issuance of special use permits when necessary	• Same as Alternative A	• Same as Alternative A
FRONT COUNTRY VISITOR EXPERIENCE AND UNDERSTANDING	• Broaden interpretive stories, consult tribes • Maintain visitor center and rim trails • Maintain camping and picnicking	• Broaden interpretive stories, consult tribes • Remodel or expand visitor center, new exhibits and AV, greatly expand rim trails, improve opportunities for people with disabilities, expand opportunities for youth • Additional NPS interpretive staff • Maintain camping and picnicking, improve accessibility	• Broaden interpretive stories, consult tribes • Remodel visitor center, new exhibits and AV, expand rim trails, improve opportunities for people with disabilities, expand opportunities for youth • Involve tribes in interpretive programs, skills demonstrations, special events • Maintain camping and picnicking, improve accessibility

Topic	**ALTERNATIVE A: NO ACTION** **Continue Existing Management**	**ALTERNATIVE B: Focus on NPS LAND**	**ALTERNATIVE C: PREFERRED** **Emphasize Partnerships**
BACKCOUNTRY VISITOR EXPERIENCE AND UNDERSTANDING	• Protect remoteness with Backcountry Management Plan • Continue limited guided NPS tours to Betatakin via Tsegi Point (cross-canyon trail remains closed because of significant rockfall hazard) • Continue limited Keet Seel permits • Inscription House remains closed	• Protect remoteness with Backcountry Management Plan • More flexible Betatakin tours, more per day, extend season. Access via Tsegi Point (cross-canyon trail remains closed because of significant rockfall hazard) • Extend season for Keet Seel permits, close alcove to visitors to protect ancient village • Begin limited Inscription House tours by NPS	• Protect remoteness with *Backcountry Management Plan* and by developing partnerships to ensure complementary activities and development around monument • More guided tours to Betatakin per day (NPS or partner), extend season. Access via Tsegi Point (cross-canyon trail remains closed because of significant rockfall hazard) • Extend season for Keet Seel permits, continue limited guided tours within alcove • Begin limited Inscription House tours by NPS or partners
PARTNERSHIPS	• Consult with associated tribes as needed, government to government	• Consult regularly with individual associated tribes, government to government • Establish American Indian consultation committee	• Consult regularly with individual associated tribes, government to government • Establish American Indian consultation committee • Seek agreements for a wide variety of activities, including student interns, resource protection, guided tours, educational outreach, universities, research, craft demonstrations, etc.

Topic	**ALTERNATIVE A: NO ACTION** **Continue Existing Management**	**ALTERNATIVE B: Focus on NPS LAND**	**ALTERNATIVE C: PREFERRED** **Emphasize Partnerships**
FACILITIES	• Maintain existing visitor center (5,000 SF) • Maintain front country trails (1.5 miles) • Maintain campground, picnic area • Maintain limited administrative space and inadequate curatorial space in visitor center • Maintain maintenance area • Maintain seven housing structures (for seven employees) • Maintain utilities	• Remodel or expand VC (5,000–6,000 SF), new exhibits and AV programs • Increase front country trails (to 5 or 6 miles) • Maintain campground, picnic area • Build a ranger station at Inscription House • Relocate Keet Seel campground into NPS boundary • Build new administration building 3,500 SF • Build curatorial storage 1,000 SF • Expand maintenance with fire cache, four shop bays, covered parking • Expand NPS housing to nine structures (for thirteen employees) • Rehabilitate utilities	• Remodel VC (5,000 SF), new exhibits and AV programs • Increase front country trails (to four miles) • Maintain campground, picnic area • Build a ranger station at Inscription House • Keet Seel campground remains outside boundary • Build new administration building 3,000 SF • Build curatorial storage 1,500 SF • Expand maintenance with fire cache, four shop bays, covered parking • Expand NPS housing to nine structures (for thirteen employees) plus trailer pads for volunteers and researchers • Rehabilitate utilities
BOUNDARY MODIFICATIONS	• Review and revise headquarters land agreement with Navajo Nation • Seek agreements for access to remote sites	• Seek transfer of headquarters unit from Navajo Nation to NPS • Seek agreements for access to remote sites	• Seek transfer of headquarters unit from Navajo Nation to NPS • Seek agreements or conservation easements for protection of adjacent cultural resource, ensure access for visitors and administration, and provide a buffer
STAFF	• Eleven permanent • Eleven seasonal	• Sixteen permanent (including new law enforcement ranger, interpretive ranger, preservation specialist, curator) • Fourteen to sixteen seasonal	• Sixteen permanent (including new law enforcement ranger, management assistant to develop partnerships, preservation specialist, curator) • Fifteen to seventeen seasonal

ANNUAL OPERATING COST	• $750,000	• $1,140,000	• $1,190,000
TOTAL AVERAGE CONSTRUCTION COST (NET)	• $2,250,000	• $7.0 million	• $6.1 million
LAND PROTECTION COST	• None	• HQ unit—purchase or exchange	• HQ unit—purchase or exchange • Conservation easements

INTRODUCTION

The "Affected Environment" describes the existing environment in and around Navajo National Monument. The focus of this section is the key park resources, uses, and socioeconomic conditions that have the potential to be affected by the alternatives should they be implemented. Some topics must be considered in environmental impact statements, such as threatened and endangered species.

IMPACT TOPICS CONSIDERED IN THIS ENVIRONMENTAL IMPACT STATEMENT

Cultural Resources

The 1966 National Historic Preservation Act, as amended, and 36 CFR 800 require federal agencies to consider the effect of their undertakings on properties listed or eligible for listing on the National Register of Historic Places. The National Environmental Policy Act also requires evaluation of project effects on the human environment. Navajo National Monument is listed on the national register. Significant archeological resources may exist within the monument. Cultural resources are addressed as an impact topic in this document. Cultural resource topics analyzed include:

- Historic Structures
- Archeological Resources
- Ethnographic Resources
- Museum Collection

NATURAL RESOURCES

WATER RESOURCES, WETLANDS, AND FLOODPLAINS.

National Park Service policies require protection of water quality consistent with the Clean Water Act (1948 and as amended in 1956, 1972, and 1977), a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters and to prevent, control, and abate water pollution. Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers to prohibit or regulate, through a permitting process, discharge of dredged or fill material into U.S. waters.

Executive Order 11990, Protection of Wetlands, requires federal agencies to avoid, where possible, impacts on wetlands. Proposed actions that have the potential to adversely impact wetlands must be addressed in a statement of findings. Jurisdictional wetlands occur in and nearby all three units of Navajo National Monument.

Executive Order 11988, Floodplain Management, requires all federal agencies to avoid construction within the 100-year floodplain unless no other practical alternative exists. Certain construction within a 100-year floodplain requires preparation of a statement of findings. Floodplains exist within and nearby all three units of Navajo National Monument.

Because water resources, wetlands, and floodplains could be affected by implementation of any of the action alternatives, water resources will be addressed as an impact topic.

BIOTIC COMMUNITIES (VEGETATION, SOILS, AND WILDLIFE)

The National Environmental Policy Act (1969) calls for an examination of the impacts on all components of affected ecosystems. National Park Service policy is to maintain all the components and processes of naturally evolving ecosystems, including the natural abundance, diversity, and ecological integrity of plants and animals (National Park Service *Management Policies,* 2001). Because biotic communities could be affected by implementation of any of the action alternatives, biotic communities will be addressed as an impact topic.

THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (1973) requires an examination of impacts on all federally listed threatened or endangered species. National Park Service policy also requires examination of the impacts on federal candidate species, as well as state-listed threatened, endangered, candidate, rare, declining, and sensitive species.

Because threatened, endangered, candidate, rare, declining, and sensitive species could be affected by any of the action alternatives, listed species and other species of concern will be addressed as an impact topic.

Visitor Understanding And Experience

Providing visitor experiences for understanding the resources is a key mission of the National Park Service. The alternatives could appreciably affect the experiences of the visitors and the interpretation of resources, and therefore the impacts will be analyzed.

Remoteness

Remoteness is an important value at Navajo National Monument, identified in the mission statement, significance of the monument, and mission goals. Because the alternatives vary in how they would affect remoteness, the impacts will be analyzed. The components include:

- Natural Soundscapes
- Lightscapes
- Scenic Vistas

Socioeconomic Environment

The monument is an important part of the local economy. There are direct and indirect effects of employment, construction, and visitor spending. The alternatives vary in their potential effects on the local economy and jobs, and these impacts will be analyzed.

Monument Operations

The alternatives have various effects on the infrastructure and staff of Navajo National Monument, and these impacts will be analyzed.

IMPACT TOPICS CONSIDERED BUT NOT ANALYZED IN DETAIL

Natural Resources

AIR QUALITY

Section 118 of the 1963 Clean Air Act (42 U.S.C. 7401 *et seq.*) requires a National Park Service unit to meet all federal, state, and local air pollution standards. Navajo National Monument is designated as a Class II air quality area under

the Clean Air Act, as amended. A Class II designation allows moderate deterioration of air quality within national ambient air quality standards. The Clean Air Act also provides that the federal land manager has an affirmative responsibility to protect air quality-related values (including visibility, plants, animals, soils, water quality, cultural resources, and visitor health) from adverse pollution impacts.

Air quality in Navajo National Monument is affected by a variety of internal and external air pollution sources. Internal air pollution primarily originates from such sources as vehicle emissions, furnaces, boilers, woodstoves, and campfires, and is influenced by a variety of factors such as humidity, precipitation, and temperature inversions. Because air pollution generated by such sources would exist into the future with anticipated emission levels remaining relatively similar to existing levels, implementation of any of the proposed alternatives is anticipated to have negligible, long-term, direct, indirect or cumulative impacts on the monument's overall air quality.

Local air quality would be temporarily affected by dust and construction vehicle emissions during construction. Hauling material and operating equipment during the construction period would result in increased vehicle exhaust and emissions. Emissions—CO, NO_x, and SO_2—would generally disperse fairly quickly from the project area(s) because air flow is good and air stagnation seldom occurs. To mitigate the impacts of increased vehicle emissions, idling of construction vehicles would be limited. Fugitive dust plumes from construction equipment would also intermittently increase airborne particulates near the project site. To partially mitigate these effects, dust suppressant materials, chemical stabilizing agents, or other reasonably available control measures would be applied. Overall, construction related impacts upon air quality would be adverse, but short-term and negligible.

External pollution sources are primarily sulfates, which contribute foremost to the haze at the monument. The haze is particularly noticeable during the summer months, before the onset of the monsoon season in August. Sulfates are carried into the monument from major industrial and mining centers to the south and west, from power plants to the east and west, as well as from metropolitan southern California and Arizona. The long distance transport of pollutants, which would be unaffected by any of the alternatives and any reasonably foreseeable future actions, would exist into the future with anticipated emission levels remaining relatively similar to existing levels. The National Park Service has very little direct control over air quality within the airshed encompassing the monument, but will cooperate with the Arizona Department of Environmental Quality (ADEQ) and the Environmental Protection Agency, as necessary, to monitor air quality and ensure that the monument's overall air quality and visibility conditions remain good.

Because (1) degradation of local air quality due to construction activities and emissions would be short term, lasting only as long as construction, and negligible; and (2) any long-term, adverse impacts that implementation of any of the alternatives would have on the air quality of either Navajo National Monument or the region, are negligible, air quality was dismissed as an impact topic.

GEOLOGY

Navajo National Monument is on a portion of the Colorado Plateau where uplift and erosion have carved deeply incised canyons into layers of sandstone. The monument is found

within Tsegi Canyon and Shonto Plateau (or Navajo Mountain Drainage), and is located on the Organ Rock Monocline. This is an uplift that follows Highway 160, which is in a long valley between the Shonto Plateau and Black Mesa. The three units of the monument incorporate six geologic layers. The top layers are Navajo Sandstone and the Kayenta Formation; this is where the alcoves are formed. The other four layers include Wingate Sandstone, Churchrock Member, Owl Rock Member, and Petrified Forest Member. There are three layers of alluvial deposition in Tsegi Canyon; the oldest being Jeddito Formation, Tsegi Formation, and the youngest is the Naha Formation (1450–1880).

The first detailed report on the geology of Tsegi Canyon drainage was written in 1945. This report incorporated a discussion of the episodes of alluvial deposition and erosion and their relationship to the pre-Columbian and historic occupations. Other studies over the years have looked at geomorphology of the region, in particular, the acceleration of arroyo cutting. There is controversy over the reason for the deposition and erosion cycles, but climate change and human activities are two known contributors. A small collection of geological (ten specimens) and two paleontological specimens are housed in the monument's museum collection. A dinosaur footprint was brought in from a quarry and placed on a trail near the visitor center for interpretive purposes. No other paleontological research has been done within the monument boundaries.

Sandstone and shale compose most of the local geologic bedrock at the monument. The canyons, cliffs, and alcoves can be unpredictable with regards to rockfall. Sandstone can become very fragile, depending on precipitation, infiltration, and freeze/thaw cycles. Whether rockfall is related to other human causes is still not understood. The geology has not been appreciably altered as a result of past monument activities, and because none of the action alternatives would appreciably impact underlying geological formations and would not involve direct impacts to unique or important geological resources, adverse effects would be negligible. Thus, the topic of geology will not be addressed as an impact topic in this document.

PRIME AND UNIQUE FARMLAND

In August 1980, the Council on Environmental Quality (CEQ) directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resource Conservation Service as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to the Natural Resource Conservation Service, the soils predominantly composing Navajo National Monument are useful primarily for rangeland and wildlife habitat and are not classified as prime or unique farmland. Thus, the topic of prime and unique farmland will not be addressed as an impact topic in this document.

Socioeconomic Environment

ENVIRONMENTAL JUSTICE

According to the Environmental Protection Agency, environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic

group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Presidential Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Because the proposed action would not have health or environmental effects on minorities or low-income populations or communities as defined in the Environmental Protection Agency's Draft Environmental Justice Guidance (July 1996), and Navajo National Monument will continue to regularly consult with traditionally affiliated American Indians to ensure that this remains the case, environmental justice was dismissed as an impact topic.

AFFECTED ENVIRONMENT

Cultural Resources

ARCHEOLOGICAL RESOURCES, STRUCTURES, AND CULTURAL LANDSCAPES

The three units of Navajo National Monument—Betatakin, Inscription House, and Keet Seel—were surveyed for archeological resources during 1988. A total of 53 sites and 88 isolated finds were recorded and are listed on Table 2.1: Archeological Resources.

The range of recorded archeological resources includes the well-known villages of Betatakin, Inscription House, and Keet Seel, which represent some of the best preserved examples of pre-contact Pueblo communities, as well as the lesser known pre-contact structures of Turkey Cave, Snake House, Owl House, and Kiva Cave; various petroglyphs, pictographs, and inscriptions; a multitude of small, open pre-contact sites that reflect seasonal occupation and use; and a variety of Navajo sites related to domestic, ceremonial, and livestock management activities.

The Navajo Nation land, about 245 acres on the mesa top above Betatakin, was set aside in 1962 for Navajo National Monument's administrative and residential needs. This parcel, which contains the visitor center, the campground, the maintenance facility, and the residential area, has more than 30 pre-contact and historic sites. Though many of these sites have been impacted by the construction of buildings, roads, parking areas, and the installation of utility lines, most retain at least some archeological value. As this area continues to be developed, there is a high potential for the discovery of additional sites. In pre-Columbian times, the area was likely the scene of seasonal subsistence activities, such as the gathering of wood, hunting small game, and foraging of plants such as the piñon nut, a high bulk food that could have been stored for several years. Historically, the area was the scene of early NPS development and activities.

Several of the sites recorded during the survey are also listed on Navajo National Monument's List of Classified Structures (LCS), as shown on Table 2.2: List of Classified Structures.

Three other historic structures—a ramada and ranger station and the maintenance headquarters, which date from the early development of the monument during the 1930s and 1940s—also appear on the List of Classified Structures. None of the aforementioned structures have been evaluated

individually for listing in the National Register of Historic Places, however, the pre-contact structures on the List of Classified Structures were identified as contributing elements in the National Register nomination prepared in 1988 for Navajo National Monument (Betatakin, Inscription House, and Keet Seel).

Navajo National Monument's visitor center and campground comfort station, which are not on the List of Classified Structures, were constructed during the National Park Service's Mission 66 era (1956–1966), a design and construction program intended to revitalize the nation's national parks through a ten-year program of capital investment. The Mission 66 Review Board for the National Park Service's Intermountain Region has determined that the visitor center, comfort station, and four Mission 66 houses lack the significance and integrity to be listed in the National Register.

Table 2.1: Archeological Resources

Unit	Sites	Isolated Finds
Headquarters	30	3
Betatakin	10	67
Inscription House	6	5
Keet Seel	7	13

Table 2.2: List of Classified Structures

SITE NAME	LCS #	DESCRIPTION	ERA
Inscription House	01162	Multistory pueblo of more than 70 rooms, exhibiting stone masonry, adobe brick, and jacal construction. Site consists of living rooms, storage rooms, ceremonial rooms (kivas), and courtyards.	Pre-contact
Betatakin	01161	Multistory pueblo of more than 130 rooms, exhibiting stone masonry, adobe brick, and jacal construction. Site consists of living rooms, storage rooms, ceremonial rooms (kivas), and courtyards.	Pre-contact
Keet Seel	01163	Multistory pueblo of more than 150 rooms, exhibiting stone masonry, adobe brick, and jacal construction. Site consists of living rooms, storage rooms, ceremonial rooms (kivas), and courtyards.	Pre-contact
Turkey Cave	09511	Alcove containing remnants of two groups of structures and variety of pictographs, petroglyphs, and inscriptions.	Pre-contact
Kiva Cave	12116	Semi-subterranean kiva with small associated ceremonial annex.	Pre-contact
Owl House	09512	Dual alcoves containing remnants of two structures and associated pictographs, petroglyphs, and inscriptions.	Pre-contact
Snake House	09513	Single-story, linear pueblo composed of four structures, with as many as 19 rooms. Associated pictographs, petroglyphs, and inscriptions.	Pre-contact
Navajo Hogan	65599	Remnants of axe-cut leaners from conical, fork-sticked structure.	Historic
Navajo Sweathouse	65595	Conical, fork-sticked structure with earthen veneer, two stacks of limestone slabs, and wood chop area.	Historic
Ranger Station	65596	Probably associated with the first visitor contact station and residence, which were the first permanent buildings in the Monument. Representative of Navajo pole-type ramada construction.	Historic
Ramada	65597	One of the first permanent historic buildings in the Monument. It represents New Deal era federal relief programs and was constructed by Navajo Civilian Conservation Corps members.	Historic
Maintenance Headquarters	65598	Built at the same time as the first ranger station, and thus one of the first permanent buildings within the Monument.	Historic

These structures and others, including roads and trails, may be contributing elements of cultural landscapes. According to the National Park Service's *Cultural Resource Management Guideline* (DO-28), a cultural landscape is

> . . . a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions.

Thus, cultural landscapes are the result of the long interaction between man and the land, the influence of human beliefs and actions over time upon the natural landscape. Shaped through time by historical land use and management practices, as well as by politics and property laws, levels of technology, and economic conditions, cultural landscapes provide a living record of an area's past, a visual chronicle of its history. The dynamic nature of modern human life, however, contributes to the continual reshaping of cultural landscapes; making them a good source of information about specific times and places, but at the same time rendering their long-term preservation a challenge.

None of the landscapes at Navajo National Monument have been formally evaluated for listing in the National Register. However, landscapes associated with Betatakin, Inscription House, and Keet Seel fit the definition of *ethnographic landscapes*—landscapes associated with contemporary groups that are typically used or valued in traditional ways. The monument may also contain *historic vernacular landscapes*, which illustrate peoples' values and attitudes toward the land and reflect patterns of settlement, use, and development over time. In addition, the headquarters unit, consisting of administrative and residential areas, visitor center, and campground, may fit the criteria of a *historic designed landscape*.

ETHNOGRAPHIC RESOURCES

National Park Service guidelines define ethnographic resources as "…variations of natural and standard cultural resource types. They are subsistence and ceremonial locales and sites, structures, objects, and rural and urban landscapes assigned cultural significance by traditional users. The decision to call resources 'ethnographic' depends on whether associated peoples perceive them as traditionally meaningful to their identity and as a group and the survival of their lifeways. When natural resources acquire meaning according to the different cultural constructs of a particular group, they become ethnographic and thus cultural resources as well" (*Cultural Resource Management Guideline* Director's Order 28, 1998).

National Park Service guidelines and policies outline the agency's commitment to the culturally informed management of ethnographic resources. National Park Service policies require that planning efforts include consultation with the communities traditionally associated with park lands and resources in an effort to identify ethnographic resources and the appropriate management strategies for them (see National Park Service *Management Policies,* 2001, 5.1.3.2, 5.3.5.2.6, 5.3.5.3, *and Cultural Resource Management Guideline* Director's Order 28, 1998).

In addition to National Park Service policies, the National Environmental Policy Act requires analysis of effects of those agency activities requiring an environmental impact statement on all aspects of the human environment,

including its cultural aspects (Council on Environmental Quality's NEPA regulations, Sections 1508.8 and 1508.14). When those cultural aspects of the human environment are "properties of religious and cultural importance to an Indian tribe … that may be determined to be eligible for inclusion on the National Register" the National Historic Preservation Act also requires tribal consultation to identify such properties (National Historic Preservation Act (1966) as amended, Section 101 (d) (6) (A). Executive Order No. 13175, 65 Fed. Reg. 67249 (2000) (Consultation and Coordination with Indian Tribal Governments) requires each executive agency to "have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications."

While no specific efforts have yet been initiated to identify ethnographic resources at Navajo National Monument, an ethnographic study of the traditional history of the monument and one of the cultural affiliations between contemporary communities and the monument are under way. When completed, these studies will contribute to an understanding of the specific resources to which traditionally associated communities attach particular cultural significance. "Traditionally associated" communities are considered those to whom park lands and resources play an integral role in the ongoing cultural identity of the group, who have been associated with park lands and resources for at least two generations, and whose relationship to park lands and resources predate the establishment of the park unit (see National Park Service *Management Policies, 2001, 5.3.5.3*). In addition to ethnographic studies, the park has undertaken numerous consultations with many of these associated American Indian communities, including specifically for the purposes of this *General Management Plan.*

Through these consultations, the general management plan planning process has included consideration of ethnographic resources and has designed alternatives so as to avoid negative effects to them. In addition, future consultations for the purposes of identifying traditional cultural properties in the process of National Historic Preservation Act (36 CFR Part 800) compliance for individual undertakings, even after finalization of the general management plan, will help to ensure that negative effects to ethnographic resources are avoided.

Although not all ethnographic resources in Navajo National Monument have been identified, consultation, preliminary results of ethnographic studies, and a great deal of ethnographic literature suggest certain categories of resources to which associated tribes attach cultural significance. It should be noted that ethnographic research and consultations have focused primarily on Hopi, Navajo, and Zuni associations with the monument area. While various Paiute tribes also have historical associations with the area, the resources to which they attach cultural significance are less well known than for the other three tribes. It should also be noted that although the GMP is concerned with planning for and management of resources within park boundaries, in general, Navajo National Monument can be considered a part of a much larger cultural landscape to which all associated tribes ascribe historical and ceremonial significance. In that sense, Navajo National Monument lands and resources as a whole can be said to have "ethnographic value" in relation to the larger region of which they are a part (see Navajo Nation 1995, Norcini et al., 2001).

Ethnographic research and consultations undertaken to date have indicated that all archeological sites and pre-contact structures, especially the large cliff dwellings of Betatakin, Keet Seel, and Inscription House, as well as Turkey Cave, Owl House, and Snake House, and any sites containing human remains, are ethnographic resources and require special management considerations. Additional ethnographic resources identified through studies and consultations include various plant and animal species, springs, such as the one in Betatakin Canyon, and possibly other physiographic features. Additional historic cultural resources, such as the hogan, sweathouse and ramada, and trails, may also have ethnographic value to the residents of the Navajo community that has been part of the Navajo National Monument landscape since before the monument's designation. Identification of specific ethnographic resources and the larger context of which they are a part will have to wait for the completion of ongoing ethnographic studies based on reviews of ethnographic literature and consultations with knowledgeable tribal representatives. In the meantime, however, continued formal consultations with park-associated tribes throughout the completion and implementation of this GMP and during the planning of future management activities will help ensure the culturally appropriate management of the monument's ethnographic resources.

MUSEUM COLLECTIONS

Museum collections (pre-contact and historic objects, natural history specimens, artifacts, works of art, and archival and manuscript material) are important not only in their own right but also for the information they provide about processes, events, and interactions among people and the environment. More than 100,000 objects and articles make up the Navajo National Monument museum collection, and about 50 percent of the collection has been cataloged. The collection is classified by the categories shown on Table 2.3: Museum Collections.

Navajo National Monument does not have an appropriate museum collection storage facility. Significant portions of the collection are housed in various facilities, including the closet of the monument's administrative building, the National Park Service's Western Archeological Conservation Center, and several other known institutions.

Table 2.3: Museum Collections

CATEGORY	# OF OBJECTS	# CATALOGED	GENERAL DESCRIPTION
Archeology	78,072	46,792	Primarily objects excavated from Keet Seel, Inscription House, and Betatakin during the 1930s and 1960s.
Ethnology	277	277	Navajo rugs, weaving implements, jewelry, and pottery.
History	374	374	Historic artifacts; saddle, wagon, and metal pot.
Archives	34,685	7,966	Historic photographs and negatives, correspondence, documents, memos, photographs, and field notes.
Biology	1,437	37	Herbarium (vascular plants, mosses, etc.), insects, and animal bones.
Paleontology	0	0	Fossil specimens
Geology	1	1	Rock and mineral specimens

Natural Resources

WATER RESOURCES, WETLANDS, AND FLOODPLAINS

Water resources at Navajo National Monument are not well studied or documented. A water resources report briefly described the local hydrology and possible groundwater problems at the monument due to water withdrawal by coal mining operations on nearby Black Mesa. Despite this lack of information, the monument can be described as part of the Colorado Plateau Region, where water, despite its rarity, is the mainstay of life and the center of activity for humans, wildlife, and diverse plant species. At Navajo National Monument, water is found mostly as an ephemeral, intermittent, or year-round seep, spring, or stream, either in the sandstone walls and alcoves or in the riparian valleys and arroyos.

It is believed that historically the water table was much higher all over the Southwest region. Some researchers believe that the drop in groundwater levels is somehow connected to the overall increase in erosion and arroyo cutting throughout the region. Many factors most likely affected water levels, including climatic changes, extensive grazing, farming, and increased human occupation. Presently, the ability to measure the hydrology of seeps and springs accurately over the long term is a complex, if not impossible task. Hydrologic models for measuring stream flows and groundwater levels are much more dependable, but have not been implemented at the monument. Only qualitative observations by maintenance personnel suggest that water depth in the monument's well continues to get lower, and at this point in time, the causes are unknown.

Both the Keet Seel and Inscription House units are located alongside a year-round stream within an active floodplain. Both stream channels are experiencing active arroyo cutting and erosion, and stream bank instability. Betatakin does not have any aboveground water flowing along the old floodplain, but the water table is not too far removed from the surface. All three units, however, can experience flood events due to monsoonal rain events. These events are usually minor and short lived, but could affect visitor safety. Although there are no floodplain maps available for the monument, it is assumed that some portion the stream arroyos near Keet Seel and Inscription House in which visitor would hike would be in the regulatory floodplain and subject to the NPS Floodplain Management Guideline (1993). Betatakin visitors never actually cross or get close to the stream bed and are not likely to be hiking within the regulatory floodplain. Other nearby facilities such as composting toilets at Keet Seel and Betatakin, and the Keet Seel ranger station, picinic area, and backcountry camping area substantially higher that the arroyo and not likely to be within the regulatory floodplain.

BIOTIC COMMUNITIES (VEGETATION, SOILS, AND WILDLIFE)

Navajo National Monument is located in the Colorado Plateau region, which lies in the zone of arid-temperate climates in North America. This type of climate is characterized by periods of drought and irregular precipitation, relatively warm to hot growing seasons, and long winters with sustained periods of freezing temperatures. Winters are dominated by Pacific region storm patterns, while summers are dominated on the southern portions of the plateau by monsoonal moisture from the Gulf of Mexico. Orographic effects control local climates on the central portions of the Colorado Plateau. Evapotranspiration rates are extremely high for a temperate

region, resulting from hot summers and extremely low precipitation (100–250 mm/yr in most locations).

Vegetation

The vegetation is characterized by low, open woodlands of drought-adapted conifers at higher elevations and extensive areas of drought-tolerant shrubs and grasses at lower elevations. At the highest elevations, significant communities of Ponderosa Pine, mixed conifer, and subalpine forests occur. Due to freezing temperatures in the winter, large succulents that characterize subtropical and warm-temperate regions are lacking. The most widespread alliances are piñon-juniper woodlands; big sagebrush, blackbrush, four-wing saltbush, and sand-shrub shrublands; Fremont Cottonwood, tamarisk, and coyote willow riparian forests and shrublands; and galleta and blue grama grasslands. Scattered throughout, there are areas of local unusual or in some cases unique vegetation, including hanging gardens (lush natural plant communities clinging to alcoves and seeps), spring-supported deciduous woodlands, and mat shrub and forb-dominated vegetation on badlands of clay and gypsum.

Checklists along with information on plant communities, microhabitat relationships, and population dynamics have been published for the overall region. Relatively little is known about indigenous annual plants, microbiotic crust communities, and exotic plants at the monument. Floristic and vegetation work has been conducted since the 1930s in Betatakin Canyon. The monument's herbarium, with plant specimens collected mainly in the 1930s and 1960s, contains more than 500 specimens. The natural resources of the Betatakin unit include deeply incised canyon walls of Navajo sandstone, enormous alcoves and rock shelters, the relict forest community with its micro- and macro-habitats, plants utilized for traditional American Indian cultural practices, slick rock soil islands, hanging gardens, pack rat middens, natural seeps and springs, and the greatest biological diversity within Navajo National Monument.

The unique "relic aspen forest" of Betatakin Canyon, and its associated natural springs constitute one of most significant natural resources at Navajo National Monument. This relic forest is composed of aspen, Douglas-fir, white fire, red-osier dogwood, water birch, chokecherry, box elder, horsetail, and others. Betatakin Canyon exhibits more than twice as many plant species when compared with the rest of the monument lands. Scholars believe that Betatakin Canyon, the cliffs, cave, seeps and springs, upper forest, riparian area, and the associated flora and fauna were essentially the same then (A.D. 1200) as now, except for minor changes wrought by the natural processes of erosion, biotic modifications, and human activities.

The flora of Keet Seel and Inscription House units is not well known. The natural resources of the Keet Seel Unit include piñon, juniper, and oak communities, springs and seeps, riparian habitats, severely eroded alluvial terraces, deeply incised canyon walls of Navajo sandstone, slick rock soil islands, and alcoves. The natural resources of the Inscription House unit include piñon, juniper communities, planted cottonwoods, springs and seeps, riparian habitats, severely eroded alluvial terraces, canyon walls of Navajo sandstone, and alcoves.

Soils

Soil surveys have not been completed for Navajo National Monument, but the surrounding Navajo Nation lands are classified as Sheppard-Rock outcrop association. The Sheppard soils have textures ranging from loamy fine sand to sand and are found predominantly on 2 to 5 percent slopes and at depths up to 60 inches. These soils are subject to severe wind erosion if vegetation is disturbed. Throughout

the Colorado Plateau, including the monument, there are extensive sections of fragile microbiotic crusts. These crusts are composed of an intricate network of cyanobacteria, green algae, lichens, mosses, microfungi, and bacteria. They play an important role in the Colorado Plateau ecosystems where they are extraordinarily well developed and may represent 70 to 80 percent of the living ground cover. All three units of the monument have soil crusts within their boundaries. Most of them are apparent only in areas where no disturbance has occurred. They are very susceptible to breakage and wind dispersal after even minor disturbances such as walking and hiking. Larger and less fragile crust and sandstone formations are sometimes referred to as "desert pavement" in the plateau region and are found in the monument mostly on the mesa tops.

The National Science Foundation in cooperation with the National Park Service is investigating the microbiotic crust communities at the monument and in the surrounding Colorado Plateau. Researchers are surveying and identifying the microflora of these soil crusts to determine whether healthy functioning systems still exist where disturbance has occurred versus where it has not. It appears that the ability to predict resistance and resilience of soil crust to disturbance (such as recreation) may depend on the specific microflora present. The soil binding action of these crusts over time and over large expanses is considered one of the major factors in maintaining soil stability throughout the Southwest region.

Wildlife

Little current literature is available on birds of the Navajo National Monument; many of the existing papers were completed decades ago. Otherwise, most of the available documentation is from early work, which covered a larger area and provides primarily suggestions of species that may occur. Bird species found to be migrants of the monument during these surveys included northern goshawks, kestrels, ferruginous hawks, peregrine falcons, golden eagles, and bald eagles. Birds typically seen in the Betatakin area include the American robin, plain titmouse, common bushtit, black-throated gray warbler, and the gray-headed junco.

Relatively little is known about mammals in the monument, particularly small mammals and bats. Some larger mammals periodically observed on the mesa include gray foxes, coyotes, mountain lions, bobcat, black bear, mule deer, black-tailed jackrabbits and desert cottontails, rock and spotted ground squirrels, and a variety of mice. Recent surveys documented sightings of five bat species at the monument including the long-eared bat, long-legged gat, Yuma myotis bat, Townsend's big-eared bat, and the spotted bat.

Little specific survey work for amphibians, reptiles, or invertebrates has been conducted at Navajo National Monument. A number of older, broad-scale surveys of Navajo Reservation lands include some notes on the units of Navajo National Monument. Reptiles occasionally observed in the monument include the northern plateau lizard, northern sagebrush lizard, side-blotched lizard, short-horned lizard, plateau whiptail, Great Basin gopher snake, garter snake, and Hopi rattlesnake. Amphibians sighted in the monument include western spadefoot toad, woodhouse toad, canyon tree frog, and the northern leopard frog. Invertebrates commonly found at the monument include orthopterans (Jerusalem crickets, grasshoppers, etc.) and snails.

THREATENED AND ENDANGERED SPECIES

According to the U.S. Fish and Wildlife Service, State of Arizona, and Navajo Nation's Fish and Wildlife Department, the following threatened, endangered, and candidate species and species of special concern are inhabitants or potential

inhabitants of Navajo County (see table 2.4). Species updates are available from all of these agencies.

An intensive survey of threatened, endangered, and other special status species was undertaken from 1995 to 1997, which documented species at Betatakin, Keet Seel, and Inscription House units, plus the administrative area on Navajo Nation land. The general approach was to compile a preliminary list of target species to survey based on current lists of threatened and endangered species and species of concern and information on distribution and habitat of those species (table 2.4).

There are no watercourses within the monument boundaries that can presently support the Apache (Arizona) trout, little Colorado spinedace, and loach minnow. Chiricahua leopard frog has not been sighted yet within the monument. The reintroduced populations of the black-footed ferret are not known to be nearby the monument. The peebles Navajo cactus has not been found at the monument. The bald eagle, California condor, peregrine falcon, ferruginous hawk, goshawk, the golden eagle, and black-crowned night heron range over large areas and are potential transients in the monument, but there are no known nesting sites at any of the three units. Habitat for the southwestern willow flycatcher is present on the floor of Betatakin Canyon, but the species has not been observed in the monument.

Field biologists and botanists documented the presence of the Mexican spotted owl; Townsend's big-eared, long-eared, long-legged, Yuma myotis, and spotted bats; northern sagebrush lizard, alcove bog orchid, and Betatakin nama. Although Navajo sedge was found near the NPS boundary, it has not yet been found within the monument. The northern leopard frog was recorded near Inscription House in 2001. The peregrine falcon, bald eagle, ferruginous hawk, goshawk, and golden eagle are considered transient at Navajo National Monument. The Southwestern willow flycatcher was surveyed for and not found even though potential habitat exists in Betatakin Canyon. The alcove bog orchid was found at Betatakin. Mexican spotted owls were found near Betatakin and Keet Seel units. The final survey report indicated that the Mexican spotted owl and the alcove bog orchid represented the most significant management concerns due to their restricted range and limited habitat, despite the fact that they are presently well protected within monument boundaries. Mexican spotted owls (MSO) were documented in Navajo National Monument from 1989 to 1998. Navajo Nation Fish and Wildlife biologists delineated a protected activity center (PAC) for the MSO, which included Betatakin Canyon. The U.S. Fish and Wildlife Service designated Mexican spotted owl critical habitat on February 1, 2001, and monument lands (Betatakin and Keet Seel) were included in this designation. The MSO Recovery Plan (1995), authored by the U.S. Fish and Wildlife Service, provides detailed mitigation measures for agencies to consider prior to project implementation.

There is also a U.S. Fish and Wildlife Recovery Plan for Navajo sedge (from 1987). One of the two known populations occurs near Inscription House unit. Members of the Inscription House Chapter of the Navajo Nation know this plant as "yellow hay" or "food for animals." They say that the species was once widespread, even in lowlands, wherever water was abundant. Now any other undiscovered populations may only occur in inaccessible cliff walls with seeps. Since these populations are only on Navajo Nation lands, mitigation efforts have concentrated on removing livestock grazing to protect existing populations.

An Inventory and Monitoring program for the National Park Service beginning in 2001 would continue efforts to confirm sightings of listed species and species of concern or any new species occurrences. This long-term program would also assist the monument in monitoring efforts on prioritized species of concern.

Potential Threatened, Endangered, Candidate Species and Species of Special Concern

COMMON NAME	SCIENTIFIC NAME	STATUS
California Condor	*Gymnops californianus*	Experimental in AZ
Peebles Navajo Cactus	*Pediocactus peeblesianus var peeblesianus*	Endangered
Black-Footed Ferret	Mustela nigripes	Experimental in AZ
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	Endangered
Apache (Arizona) Trout	*Oncorhynchus Apache*	Threatened
Little Colorado Spinedace	*Lepidomeda vittata*	Threatened
Loach Minnow	*Tiaroga cobitis*	Threatened
Bald Eagle	*Haliaeetus leucocephalus*	Threatened
Mexican Spotted Owl (designated MSO critical habitat)	*Strix occidentalis lucida*	Threatened
Navajo Sedge	*Carex specuicola*	Threatened
Chiricahua Leopard Frog	*Rana chiricahuensis*	Proposed Threatened
Northern Leopard Frog	*Rana pipiens*	Species of Concern
American Peregrine Falcon	*Falco peregrinus*	Delisted/Monitor
Black-Crowned Night Heron	*Nycticorax nycticorax*	Species of Concern
Long-legged Myotis Bat	*Myotis volans*	Species of Concern
Pale Townsend's Big-eared Bat	*Plecotus townsendii pallescens*	Species of Concern
Yuma Myotis Bat	*Myotis yumanensis*	Species of Concern
Spotted Bat	*Euderma maculatum*	Species of Concern
Long-eared Myotis Bat	*Myotis evotis*	Species of Concern
Northern Sagebrush Lizard	*Sceloporus graciosus graciosus*	Species of Concern
Alcove Bog Orchid	*Platanthera zothecina (Habenaria zothecina)*	Species of Concern
Northern Goshawk	*Accipiter gentiles*	Species of Concern
Ferruginous Hawk	*Buteo regalis*	Species of Concern
Betatakin Nama	*Nama retrorsum*	Species of Concern
Navajo Jerusalem Cricket	*Stenopelmatus fuscus ssp.*	Species of Concern
Golden Eagle	*Aquila chrysaetos*	Species of Concern

Visitor Understanding And Experience

VISITOR USE AND TRENDS

Annual visitation to Navajo National Monument was at around 100,000 people in 1997, and visitation has seen a decline in recent years to about 66,000 in 2000. In the early years of this remote national monument visitation was very low and stayed below 2,500 people per year through 1960. After the paving of Indian Highway 1 (now US 160) in the early sixties, a new nine-mile paved access road (AZ 564) reached the monument, beginning a steady increase in visitation that culminated around 1970 at 40,000 visitors per year. Visitation stayed around this level until around 1984, when it began another climb, reaching 80,000 by 1988 and topping at around 100,000 by 1992. The general pattern of growth, leveling, and decline from 1979 to the present is very similar to the visitation pattern of Grand Canyon National Park, cited in a recent survey as the most common primary trip destination of visitors to Navajo National Monument.

There is no verifiable cause for the drop in visitation in recent years, but some events may have had an effect. In 1998, the campground was closed for rehabilitation, which may have deterred some visitors and kept them away the following years.

Visitation at Navajo National Monument appears to be affected by limited facilities and programs as well as by the general trend of visitation at Grand Canyon National Park, which has also experienced a leveling of visitation in recent years.

VISITOR PROFILE

A visitor survey was conducted at the monument for one calendar year during 1999–2000. The data provided a profile of the average visitor to the monument. Nearly one-third of the visitors are from foreign (primarily European) countries. People from Arizona and California make up another third, with the remainder representing most other states. More than 59 percent of visitors were between the ages of 17 and 55, with another 30 percent age 55 or older and only 10 percent under the age of 16. The average group size is 3.1, but visitors generally either come in a small group of 2 or with a bus tour. Some 80 percent of visitors were at Navajo National Monument for the first time, and 73 percent stay less than three hours (18 percent stay less than 1 hour).

The 1999–2000 survey collected information about the activities that visitors engaged in while at the monument. According to the survey, almost all visitors stop at the visitor center, and 80 percent hike the Sandal Trail to view Betatakin. More than half stop at the arts and crafts shop. Less than 20 percent stay to camp, picnic, or hike to the Aspen Forest overlook, and 10 percent take the Betatakin tour. A very small number visit Keet Seel.

The 1999–2000 survey also revealed data about visitor expectations and background. Visitors come to Navajo National Monument because of a general or specific interest

in ancient Anasazi structures and to learn about Navajo culture. They are also primarily interested in hiking and finding solitude, and many come to camp. Visitors find out about the monument primarily from books and maps, as well as from the recommendation of others and seeing the sign on the road. Anecdotally, NPS rangers find many visitors highly knowledgeable regarding studies and theories of Anasazi culture.

In summary, foreign visitors make up a large percentage of visitors to Navajo National Monument. Most visitors are adults and are visiting for the first time, arriving in small groups of two or with a bus tour and usually staying fewer than three hours. Finally, very few visitors get to experience the guided tours to Betatakin and Keet Seel.

VISITOR UNDERSTANDING AND EXPERIENCE

Most visitors stay on top of the canyon rim. Year-round opportunities for visitors on the rim include the visitor center, the Sandal Trail (paved trail 1-mile round trip to a view of Betatakin structures), the Aspen Forest Overlook Trail (0.8-mile round trip trail to a view of the aspen forest in Betatakin Canyon), picnicking, and camping. The visitor center has an information counter staffed to answer questions and provide brochures and information about the Navajo people in both English and German translation. There is a small museum area with artifacts and a replica of a Betatakin room block, an auditorium with two video programs, and a book sales area. Outside is a Navajo homestead exhibit featuring a wagon, Navajo hogan, and sweat lodge. The trails are self-guided and have signs interpreting local plants and American Indian uses of those plants. Picnic tables are available near the visitor center, and the campground features 31 sites and has a rest room and water. A small amphitheater is used for evening programs when staff is available.

A small percentage of visitors head into the canyon for a closer experience with Keet Seel and Betatakin. From Memorial Day to Labor Day, there are opportunities to visit Betatakin and Keet Seel. The hike to Betatakin is 5 miles round trip and is available only as a guided tour. One tour per day is offered with space for 25 people; tickets are handed out on a first-come first-served basis at 8:00 a.m. Visitors on the tour spend five hours with an NPS ranger and learn not only about Betatakin and Anasazi culture but also about Navajo viewpoints and culture. To go to Keet Seel, visitors must obtain a permit in advance and attend a trail orientation program. The hike is 8½ miles each way, with most people camping overnight near Keet Seel. A ranger stationed at Keet Seel provides guided tours of the ancient town for up to 20 people per day.

Visitors have little opportunity to learn about Inscription House. This third ancient village has been closed to the public since 1968, when roads in the vicinity were improved and increasing visitation led to damage of the site. There is no mention of it in the park brochure, and it is little mentioned in publications or interpretation to protect the sites from unauthorized entry, and because most visitors are frustrated to learn about a place they cannot visit.

Visitors do have many opportunities to learn about American Indian culture. Because the federal land units of the monument are set within the Navajo Nation, visitors must pass through hundreds of miles of the Navajo Indian reservation. There are opportunities to learn about Navajo culture through firsthand experience, the nearby Monument Valley Tribal Park, Kayenta visitor center, and the staff of Navajo National Monument. Information is available

through publications and staff about the ancestral ties and significance of these lands to associated tribes.

For most visitors, the experiences of the visitor center and Sandal Trail during their brief visit provide the opportunity for a basic understanding of the ancient structures and theories of their origin and inhabitants. A small minority of visitors who are informed and plan ahead have the opportunity for the most in-depth experience and understanding by participation in Keet Seel and Betatakin Canyon tours.

ACCESS FOR DISABLED VISITORS

The visitor center, outdoor patio and adjacent exhibits, and visitor center rest rooms are accessible for mobility impaired visitors. One picnic site and one campsite are also accessible, although the campground rest room is not. The Sandal Trail is ½ mile each way and paved but has few grades with lower than a 5-percent slope, with most of the trail being on a 10- to 15-percent slope. There are rest benches along the route. The Aspen Forest Overlook Trail is 0.8 mile, steep, has steps, and is not paved. There is no means of backcountry access for the mobility impaired, although regional air tour operators do provide overflights of the ruins.

There are few opportunities for people with visual, auditory, or mental impairments. There are several "touch" exhibits in the visitor center, and the two video programs are closed-captioned.

Remoteness

Navajo National Monument has a special quality of remoteness that makes it possible for visitors to understand the ancient environment of the cliff dwelling inhabitants. Remoteness is a value to protect here and is defined for this plan as a lack of modern intrusions such as noise, vehicles, buildings, parking lots, and bright lights obstructing the night sky. Natural soundscapes, lightscapes, and scenic vistas contribute to remoteness.

NATURAL SOUNDSCAPES

The natural background sounds of Navajo National Monument include periods of quiet, wind, birds, stream flow, and waterfalls. The relative absence of intrusive human-made sounds is a value to be protected. There has been no measure of the natural ambient sound environment of the monument, but it can be assumed that the decibel reading would be similar to that of other rural settings, about 30–40 decibels (dBA). As points of reference, a whisper at five feet is about 20 dBA, a normal conversation is about 60 dBA, and heavy traffic or a noisy restaurant is about 85 dBA. The relative quiet of the monument can be disrupted by traffic, vehicles, maintenance activities, and aircraft overflights. The sandstone canyon walls can echo and amplify sounds. Visitors within in Betatakin Canyon can hear the conversations of visitors standing on the rim at the Sandal Trail overlook.

LIGHTSCAPES

Lack of and distance from development near Navajo National Monument allows for opportunities to see stars, planets, and the moon with minimal interference from artificial light, much as the ancient cliff dwellers would have seen the night sky. There is some artificial light from NPS residences, the settlements of Shonto, Inscription House, and Cow Springs, local traffic through the monument on the Shonto road, and from the campground. On cloudy nights, some light is reflected from Kayenta.

SCENIC VISTAS

The high plateau of the entrance road and headquarters unit offers expansive vistas of a colorful landscape inhabited for centuries but little altered. Hikers to Betatakin experience rugged sandstone walls and a lush, cool canyon. Hikers to Keet Seel are treated to a winding maze of canyons, rock, streams, and waterfalls. They may experience local people grazing their animals, but the general lack of modern intrusions provides visitors a strong sense of the ancient times. National Park Service facilities at headquarters make up most human-made, modern structures in the area—visitor center, roads, campground, maintenance, and residences. In the backcountry, visitors may encounter an occasional structure or vehicle.

Socioeconomic Environment

POPULATION

The population of Arizona in 1999 was 4,924,350, averaging about 40 people per square mile. The population of the Navajo Nation in 2000 was 171,631, spread over 25,351 square miles (about the size of West Virginia), resulting in 6.7 people per square mile. The population of the nearby community of Kayenta in 1999 was 5,268 people. Arizona has experienced a rate of population growth of 33 percent over the last ten years, while the Navajo Nation population is estimated to have grown by about 21 percent during the same time period. Kayenta had an unemployment rate of 12.2 percent in 1999 but has recently undergone a construction boom of new housing. The population of the Navajo Nation is 96 percent American Indian. While population growth on the Navajo Nation has not been quite as rapid as that in the rest of Arizona, its growth reflects a nationwide trend of American Indians returning to reservations to rekindle their heritage and return to family, familiar surroundings, and cultural ties.

ECONOMY

Within the Navajo Nation, some 44 percent of jobs are government jobs and 48 percent are in the private sector. The major industries providing employment are educational services (19 percent), retail trade (14 percent), other professional and related services (11 percent), public administration (10 percent), construction (9 percent), and health services (7 percent). About 57 percent of families fall below the poverty level in income. The Black Mesa coal mine provides some local jobs.

REGIONAL TOURISM

Highway 160 is a major route between the Four Corners area and the Grand Canyon. A number of attractions in the region draw tourists, including Monument Valley Tribal Park, Canyon De Chelly National Monument, Glen Canyon National Recreation Area (which includes Lake Powell, Glen Canyon Dam, and Rainbow Bridge), and Navajo National Monument. Kayenta has several major chain hotels and restaurants catering to tourists. Scattered trading posts supply tourists with food, gasoline, and other needs. The Navajo Nation does not have gaming casinos, as many other tribes do.

REGIONAL LANDOWNERSHIP AND USE

The three units of Navajo National Monument (Betatakin-160 acres, Keet Seel-160 acres, Inscription House-40 acres) are surrounded by Navajo Nation lands. The headquarters unit adjacent to Betatakin, 240 acres, is Navajo Nation land used by the National Park Service through an agreement. The Navajo Nation tribal government headquarters are located in Window Rock, but many political decisions are

delegated to the local chapters. The chapters surrounding Navajo National Monument include Shonto, Kayenta, Navajo Mountain, and Inscription House. Grazing of livestock by permit holders is the primary land use around the monument. While there are many changes going on in and around the Navajo Nation, the traditional rural lifestyle is still highly valued by many local people.

Monument Operations

Until the early 1960s, the monument operated its visitor services and administrative affairs from a small contact station. The small facility seemed adequate to meet the daily operations of the era. As the number of requests for tours and services gradually increased, the momentum forced the National Park Service (NPS) to seek an expansion of existing facilities. The signing of the Memorandum of Agreement in 1962 allowed the NPS to occupy an additional 240 acres providing the geographic space to develop amenities. The access to additional land and a series of capital improvements occurred at the same time as the paving of highway 564, connecting the monument via highway 160 to major destinations such as Grand Canyon, Albuquerque, Kayenta, and Flagstaff.

When completed in 1964, the visitor center offered 4,800 square feet for displays, offices, curatorial activities, and a research library. Completed in the same year, the maintenance yard was constructed to house government vehicles, a sign shop, metal shop, storage space, and various tool rooms within 2,530 square feet of space. Modern houses were also funded by Mission 66, providing accommodations with four, three-bedroom, 1,700-square foot units. By 1985, the park added two small hogans and a modular home with three rooms, for a total of seven residences. Most visitors spent their time in the front country, placing importance on the interpretative programs and facilities available.

Currently the monument infrastructure and staff face a severe shortage of office and workspace. The visitor center, where the public interacts with staff and receives information on the resources and surrounding area, shares the floor space with displays, audiovisual equipment, the front desk, and the gift shop, all in about 1,200 square feet. The remainder is used for employees' office space, curation of artifacts and records, and a research library.

Housing faces the same lack of available space. Currently all park housing is occupied except a small one-room hogan-style cabin. Two trailers were condemned and removed due to rodent infestations, worsening the housing situation. In addition, management also needs to provide housing for six to eight seasonal rangers who become an integral part of the summer workforce, as the local communities offer few rental opportunities.

INTRODUCTION

The National Environmental Policy Act mandates that environmental impact statements disclose the impacts of a proposed federal action. In this case, the proposed federal action is the implementation of the general management plan for Navajo National Monument.

This section of the document analyzes the potential effects of the three alternatives on the impact topics identified in the previous "Affected Environment" section:

- Cultural Resources
- Natural Resources
- Visitor Understanding and Experience
- Remoteness
- Socioeconomic Environment
- Monument Operations

The alternatives in this document provide broad management directions. Because of the general conceptual nature of their potential consequences, the alternatives can only be analyzed in general terms. Prior to undertaking specific developments or other actions as a result of the general management plan, park managers would need to decide whether or not they would need to prepare more detailed environmental documents.

This section begins with a discussion of the methodology used to identify impacts and includes definitions of terms. The impact analysis is organized by alternative, with the impacts for each topic discussed within those alternatives. Each impact topic includes an analysis of beneficial and adverse effects of the alternative, cumulative impacts, if any, and a conclusion statement. The conclusion statement includes an assessment of impairment. An impact to any park resource or value may constitute an impairment. An impact would be more likely to constitute an impairment to the extent is affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- Identified as a goal in the park's general management plan or other relevant NPS planning documents.

Any mitigation discussed with the alternatives would be undertaken.

At the end of the discussion for each alternative, there is a brief discussion of unavoidable adverse effects, effects from short-term and long-term productivity, and irreversible and irretrievable commitments of resources.

METHODOLOGY

Cultural Resources

Section 106 of the National Historic Preservation Act requires that federal agencies consider the effect of their undertakings on resources either listed in or eligible for listing in the National Register of Historic Places and afford the Navajo Nation's tribal historic preservation officer,

associated tribes, and the Advisory Council on Historic Preservation opportunities to comment. The National Park Service would continue to work with the aforementioned entities to meet the requirements of Section 106. The Navajo Nation's tribal historic preservation office, as well as other associated tribes and the Advisory Council on Historic Preservation, were invited to participate in the planning process and each also will have an opportunity to review and comment on the draft document.

The methodology for assessing impacts to cultural resources followed a five-step process: (1) identifying the areas that could be impacted; (2) comparing that location with those of resources listed, eligible, or potentially eligible for listing in the National Register of Historic Places; (3) identifying the extent and type of effect; (4) assessing those effects according to procedures established in the Advisory Council on Historic Preservation regulations (36 CFR Part 800.5, *Assessment of Adverse Effects*); and (5) considering ways to avoid, reduce, or mitigate adverse effects. Determination of potential impacts are based on the best professional judgment and have been developed through discussions with staff from the National Park Service, the Navajo Nation's tribal historic preservation office, representatives of associated American Indian tribes, and representatives of other state and local agencies and organizations.

CEQ regulations require that impacts of alternatives and their component actions be disclosed. Impacts are described in terms of type (are the effects beneficial or adverse?), duration (are the effects short or long term?), and intensity (are the effects negligible, minor, moderate, or major?). Duration of impacts to cultural resources is defined as follows:

Short-term: An impact that within a short period of time (generally one or two years but no more than five years) would no longer be detectable as the resource returns to its pre-disturbance condition.

Long-term: A change in a resource or its condition that does not return to pre-disturbance conditions and for all practical purposes is considered permanent.

The intensity of impacts in the cultural resource analysis is defined as:

- **Negligible:** Impact is at the lowest levels of detection—barely perceptible and not measurable.
- **Minor:** The impact does not alter a character-defining feature of a National Register eligible structure, archeological site, landscape, or district. Impact affects an archeological site(s) with low data potential.
- **Moderate:** Impact is readily apparent and sufficient to cause a change in a character-defining feature(s) of a National Register eligible structure, archeological site, landscape, or district, but not to the extent that the property is no longer eligible to be listed in the National Register of Historic Places. Impact affects an archeological site(s) with modest to high data potential. Adverse impacts to archeological sites could be mitigated through stabilization and/or data collection.
- **Major:** Impact results in substantial and highly noticeable change in the character-defining features of a National Register eligible structure, archeological site landscape, or district, to the extent that the property is no longer eligible to be listed in the National Register of Historic Places. Impact affects an archeological site(s) with exceptional data potential.

Ethnographic resources are considered eligible for inclusion in the National Register as Traditional Cultural Properties when they are rooted in a community's history and are

important in maintaining the continuing cultural identity of the community and meet criteria for significance and integrity. Intensity of impacts to ethnographic resources may relate to access and use of, as well as changes to, traditionally important places. Because impacts to ethnographic resources impact cultural identity and ways of life, adverse impacts to such resources would be considered moderate to major.

CEQ, moreover, calls for a discussion of the "appropriateness" of mitigation and DO-12, "Conservation Planning, Environmental Impact Analysis, and Decision-Making," requires an analysis of the "effect" of mitigation. The "resultant" reduction in intensity as a result of mitigation is an estimate of the effectiveness of mitigation under NEPA. It does not suggest that the level of effect as comprehended by Section 106 would be similarly reduced. Although adverse effects under Section 106 may be mitigated, the effect remains adverse.

The cultural resources sections of the environmental consequences include an analysis, conclusion, and summary. The analysis section provides a detailed analysis of impacts that would result from implementation of the actions composing each alternative. The conclusion section summarizes the key points or results of the analysis.

CEQ regulations also require an assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

Cumulative impacts are considered for both the no-action and proposed action alternatives.

Cumulative impacts were determined by combining the impacts of the proposed alternatives with other past, present, and reasonably foreseeable future actions. Therefore it was necessary to identify other ongoing or reasonably foreseeable future actions within Navajo National Monument and, if applicable, the surrounding region.

Natural Resources

All available information on the natural resources for Navajo National Monument was compiled, specifically on water resources, biotic communities, and threatened and endangered species, to analyze and determine potential impacts. In addition, biological research from similar and nearby ecosystems was included in the analysis of impacts for each of the proposed alternatives.

Potential impacts were based on the best professional judgment and have been developed through discussions with staff from the National Park Service, the Navajo Nation, the U.S. Fish and Wildlife Service, State of Arizona Department of Fish and Wildlife, representatives of associated American Indian tribes, and representatives of other state and local agencies and organizations.

Impacts were described in terms of type (are the effects beneficial or adverse?), context (are the effects site-specific, local, or even regional?), duration (short- or long-term?), and intensity (negligible, minor, moderate, or major?). The thresholds of change for the intensity of an impact are defined as follows:

Negligible: The impact is at the lowest levels of detection measurable.

Minor: The impact is slight, but detectable.

Moderate: The impact is readily apparent.

Major: The impact is a severe or adverse impact or of exceptional benefit.

CEQ regulations also require an assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for both the no-action and proposed action alternatives.

Cumulative impacts were determined by combining the impacts of the proposed alternatives with other past, present, and reasonably foreseeable future actions. Therefore it was necessary to identify other ongoing or reasonably foreseeable future actions within Navajo National Monument and, if applicable, the surrounding region.

WATER RESOURCES

Negligible: An action that could result in a change to water quality, quantity, wetland, floodplain, or watershed function or structure, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: An action that could result in a change to water quality, quantity, wetland, floodplain or watershed function or structure. The change would be measurable and of consequence to the water resources, but more localized.

Moderate: An action that would result in some change to water quality, quantity, wetland, floodplain or watershed function or structure. The change would be measurable and of consequence to the water resources, but more localized.

Major: An action that would have a noticeable change to water quality, quantity, wetland, floodplain or watershed function or structure. The change would be measurable and result in a severely adverse or major beneficial impact and possible permanent consequence upon the water resources.

BIOTIC COMMUNITIES

Negligible: An action that could result in a change to a population or individuals of a species or a resource, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: An action that could result in a change to a population or individuals of a species or resource. The change would be measurable and of consequence to the species or resource, but more localized.

Moderate: An action that would result in some change to a population or individuals of a species or resource. The change would be measurable and of consequence to the species or resource, but more localized.

Major: An action that would have a noticeable change to a population or individuals of a species or resource. The change would be measurable and result in a severely adverse or major beneficial impact, and possible permanent consequence, upon the species or resource.

THREATENED AND ENDANGERED SPECIES

No management actions that would potentially impact any threatened or endangered species were included in the alternatives.

Negligible: An action that could result in a change to a population or individuals of a species or designated critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: An action that could result in a change to a population or individuals of a species or designated critical habitat. The change would be measurable, but small and localized and of little consequence.

Moderate: An action that would result in some change to a population or individuals of a species or designated critical habitat. The change would be measurable and of consequence, but result in a *not likely to adversely affect* opinion from the U.S. Fish and Wildlife Service and concurrence from the Navajo Nation Natural Resources Division.

Major: An action that would result in a noticeable change to a population or individuals of a species or resource or designated critical habitat. The change would be measurable and either result in a major beneficial impact upon a population, individuals of a species, or designated critical habitat or result in a *likely to adversely affect* opinion from the U.S. Fish and Wildlife Service and concurrence from the Navajo Nation Natural Resources Division.

Visitor Understanding And Experience

Visitor surveys, including the yearly visitor survey card, and observation of visitation patterns combined with assessment of what is available to visitors under current management were used to estimate the effects of the actions in the various alternatives. The impact on the ability of the visitor to experience a full range of monument resources was analyzed by examining resources mentioned in the monument significance statement.

Impacts are described in terms of type (are the effects beneficial or adverse?), context (are the effects site-specific, local, or even regional?), duration (are the effects short- or long-term?), and intensity (are the effects negligible, minor, moderate, or major?). The thresholds of change for the intensity of an impact are defined as follows:

Negligible: The impact is barely detectable, and/or would affect few visitors.

Minor: The impact is slight but detectable, and/or would affect some visitors.

Moderate: The impact is readily apparent and/or would affect many visitors.

Major: The impact is severely adverse or exceptionally beneficial and/or would affect the majority of visitors.

CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act, require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for all alternatives.

Cumulative impacts were determined by combining the impacts of the alternatives with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects within the monument and, if applicable, the surrounding region.

Remoteness: Natural Soundscapes, Dark Lightscapes, and Scenic Vistas

Proposed actions and management prescriptions were evaluated in terms of the context, intensity, and duration of the impacts, as defined below, and whether the impacts were considered beneficial or adverse to remoteness. Remoteness is a value to be protected at Navajo National Monument. This section analyzes three components of remoteness: natural soundscapes, lightscapes, and scenic vistas.

IMPACT ASSESSMENT

The natural soundscapes component analyzes the expected effects of actions in the alternatives on the relative absence of intrusive human-made sounds. Benchmark levels of sounds are identified in decibels (dBA), and the analysis is qualitative relative to the benchmarks. The lightscapes component analyzes the expected effects of actions in alternatives on the relative absence of artificial light. Assessment is based on the descriptive observations of park staff who reside within the monument. The scenic vistas component analyzes the expected effects of actions in the alternatives on the relative absence of human-made structures on the landscape and is qualitative. Professional judgment was applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts to remoteness.

CONTEXT

The context of the impact area was local to monument lands, adjacent trails over tribal lands, and lands immediately adjacent to these areas.

INTENSITY

The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and ones that would have no discernable effect on remoteness. Minor impacts were effects on remoteness that would be slightly detectable but not expected to have an overall effect. Moderate impacts would be clearly detectable to visitors and could have an appreciable effect. Major impacts would have a highly noticeable impact on remoteness and could permanently alter the special character of Navajo National Monument.

DURATION

The duration of the impacts considered whether the impacts would be short term or long term. A short-term impact would be temporary. A long-term impact would have a permanent effect.

TYPES OF IMPACT

Impacts were evaluated in terms of whether they would be beneficial or adverse to remoteness. Beneficial impacts would enhance or improve the remoteness. Adverse impacts would make the monument less remote.

Socioeconomic Environment

The impact analysis evaluated the effect on the local economy. Some of the analysis of effects was quantitative, to determine the effects of visitor spending as well as government spending on monument operations and construction. Some of the analysis of the effects was qualitative.

IMPACT ASSESSMENT

The quantitative analysis used the Money Generation Model 2, May 2000, developed by Michigan State University, to estimate National Park visitor spending and economic impacts. This analysis looks at the direct effects of spending, secondary or multiplier effects that result from the recirculation of the money, indirect effects, induced effects, and total effects. The information put into the model came from the 1999 Visitor Use Survey of Navajo National Monument and professional judgment, such as assumptions about visitors staying longer under certain alternatives. The principal measures of economic activity generated by the model were sales, jobs, personal income, and value-added factors. Another part of the model calculated the economic activity generated by monument operations and by the construction proposed in the alternatives.

Qualitative analysis applied professional judgment to evaluate the effects of the economic activity on the socioeconomic environment (based on data from data from the Navajo Nation, US Census Bureau, and Arizona Department of Commerce) and to reach reasonable conclusions as to the context, intensity, and duration of potential impacts.

CONTEXT

The context of the impacts was local economic effects, defined by the Money Generation Model 2 as an area from 30–120 miles around the monument.

INTENSITY

The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. Negligible impacts were effects considered not detectable and ones that would have no discernable effect on the socioeconomic environment. Minor impacts were effects on the socioeconomic environment that would be slightly detectable, but that were not expected to have an overall effect. Moderate impacts would be clearly detectable to local people and could have an appreciable effect. Major impacts would have a highly noticeable impact on the socioeconomic environment and could permanently alter the socioeconomic environment.

DURATION

The duration of the impacts considered whether the impacts would be short term or long term. A short-term impact would be temporary. A long-term impact would have a permanent effect.

TYPES OF IMPACT

Impacts were evaluated in terms of whether they would be beneficial or adverse to the socioeconomic environment. Beneficial impacts would improve the socioeconomic conditions in the affected area. Adverse impacts would worsen the socioeconomic conditions.

CUMULATIVE IMPACTS

To determine potential cumulative impacts to the socioeconomic environment, actions within the region surrounding Navajo National Monument were identified. The region, or assessment area, was within a radius of about 100 miles around the monument. Potential projects, identified as “cumulative actions,” included any planning or development activity that was currently being implemented or would be implemented in the near future.

Monument Operations

The impacts on monument operations consider the effects of no action and of the alternatives on the ability of park infrastructure and staff to operate safely and efficiently. The existing infrastructure, residences, visitor center, and so on, have been in place since the mid-1960s. Growth in infrastructure has come to the monument slowly and incrementally. Several small "hogan" style houses have been added to the residential housing area, accommodating two additional employees. Often, employees are sought who can bring their own housing in the form of trailers and RVs. The space in the visitor center, maintenance shop, and staff offices has remained largely unchanged. Additional employees have been moved into fixed office and shop space and a constant number of houses. Annual visitation has increased, along with demand for more and varied educational programs. Staff numbers have risen substantially since the 1960s, increasing the demand on the limited housing situation for nonlocal monument employees. An analysis of monument operations presents the fact that public visitation and public user days have increased, but the ability to accommodate public demands, safety, and interests has remained constant at the 1960s level. Actions proposed in the alternatives would have additional impacts on monument operations. Analysis was based on the professional judgment of park staff.

CONTEXT

The context of the impact area is local to the monument.

INTENSITY

Determination of the intensity of the impact considers whether it would be negligible, minor, moderate, or major. Negligible impacts would be effects considered not detectable and would have no discernable effect on monument operations. Minor impacts would be effects on park operations that would be slightly detectable but that would not be expected to have an overall effect. Moderate impacts would be clearly detectable to visitors and could have an appreciable effect on monument operations. Major impacts would have a highly noticeable impact on park operations and could permanently change service and safety at Navajo National Monument.

DURATION

The duration of the impacts considered whether the impacts would be short term or long term. A short-term impact would be temporary. A long-term impact would have a permanent effect.

TYPES OF IMPACT

Impacts were evaluated in terms of whether they would be beneficial or adverse to monument operations. Beneficial impacts would improve monument operations. Adverse impacts would worsen monument operations.

IMPACTS OF ALTERNATIVE A (NO ACTION): CONTINUE EXISTING MANAGEMENT

Cultural Resources

ARCHEOLOGY, STRUCTURES, AND CULTURAL LANDSCAPES

Archeological resources on the mesa top could be at risk from continued maintenance of facilities, including roads, trails, and structures. Known archeological resources would be avoided to the greatest extent possible. If such resources

could not be avoided, impacts would be mitigated through data recovery. Impacts would be adverse and range in intensity from minor to major, depending upon the number, significance, and integrity of the archeological resource(s).

The necessity of monitoring construction activities to ensure the protection of archeological resources would be determined on a case-by-case basis by Navajo National Monument's archeologist. If during construction, previously unknown archeological resources were discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation strategy developed in consultation with the Navajo Nation's tribal historic preservation officer. In the event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

Stabilization, preservation maintenance, and rehabilitation of the dwellings at Betatakin, Keet Seel, and Inscription House, as well as the other pre-contact and historic structures listed on the monument's list of classified structures, would continue as needed to mitigate to the extent possible wear and deterioration of the structures without significantly altering either their present form or character. To ensure that any adverse impacts resulting from such work are only of minor to moderate intensity, all preservation and rehabilitation efforts, as well as daily, cyclical, and seasonal maintenance, would be undertaken in accordance with the National Park Service's *Management Policies, 2001* and DO-28, *Cultural Resource Management Guideline,* and the *Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*.

Stabilization has occurred at all of the cliff dwellings in the monument and would continue as needed or prescribed as a means of maintaining the integrity of the structures. Cliff dwellings at the monument have for the most part been maintained to preserve the intactness of the structures through the use of local building materials and limits placed on using inappropriate construction materials like cement. Through consultation with American Indian Tribes it has been noted that some archeological sites should not be stabilized, thus, work already completed at these sites has resulted in a minor to moderate adverse impact given their statements.

At Keet Seel visitation would be limited to two assigned areas within the alcove to view the exterior of dwellings. Continued visitation in the Keet Seel alcove would result in minor to moderate adverse impacts to the dwelling. Furthermore, impacts may occur as a result of vibration from visitor traffic in the alcove. This would result in a moderate impact to the dwelling. Overall vibration from vehicle traffic near the visitor center could result in impacts of moderate intensity to Betatakin.

Inscription House is currently closed to the public. The result of the closure has been a beneficial impact with major intensity because there is no public visitation in the alcove to disturb the structure.

Researchers would continue to be permitted in archeological sites at the monument to conduct studies that would contribute to a further understanding of the human activity in the region. Researchers working in archeological sites would result in both beneficial and adverse impacts. Moderate beneficial effects would result from the

researchers' contributions to a better understanding of the regional history. Minor to moderate adverse impacts would result from direct and indirect impacts to the pre-contact dwellings and open archeological sites during the research.

A survey within the boundaries of monument headquarters area has been conducted to identify and evaluate cultural resources. More than 30 pre-contact and historic sites have been identified within the area. This has resulted in a long-term moderate benefit by providing monument staff better understanding of the wide range of past human activities in the area as well as information to better evaluate effects of management and planning activities on cultural resources.

Vandalism could potentially occur at any of the archeological sites in the monument. Keet Seel and Betatakin are more regularly patrolled and visited by staff than other sites. From Memorial Day to Labor Day, interpretive staff visit these two sites daily through interpretive programs. This results in better protection and monitoring of these sites and a beneficial impact with moderate intensity. Inscription House, however, is visited less frequently and is more prone to vandalism, which could result in adverse impacts of moderate to major intensity.

Natural occurrences would also continue to impact dwellings and open archeological sites at the monument. The most common forms of natural impacts are rockfall and animal activity. Rockfall is a serious threat to Betatakin, Keet Seel, Inscription House, and other cliff dwellings. The alcoves in the monument vary in terms of stability. Betatakin and Snake House's alcoves are the most unstable, with the potential for rockfall damage to have a moderate to major adverse impact to structures within the cliff dwellings. Keet Seel and Inscription House's alcoves are more stable and are more likely to suffer less damage.

Moisture that moves through the alcoves and canyon bottoms in the form of runoff or seeps also impacts the monument's archeological sites. In Betatakin seeps have the potential to cause moderate adverse impacts to structures in the alcove as well as to buried archeological deposits located below Betatakin. At Keet Seel and Inscription House runoff has the potential to cause moderate adverse impacts to structures roofs, walls, and buried archeological deposits located in the canyon bottoms. There are also impacts to archeological middens related to cliff dwellings and open archeological sites that are being impacted by arroyo cutting in the canyon bottoms. This is most noticeable at Keet Seel and Inscription House, where archeological middens are being destabilized by arroyo cutting, and the potential for adverse impacts is major.

Animal activity, such as nesting and burrowing, results in impacts to the cliff dwellings and open archeological sites. Currently, raptors are constructing large nests in Betatakin, adversely impacting roofs and walls with moderate intensity. At Keet Seel and Inscription House rodents burrowing and constructing nests in structures have undermined walls and floors resulting in adverse impacts with moderate intensity. Limited controls have been put in place to remove rodents from archeological sites to other locations, resulting in a beneficial effect with minor intensity. At Keet Seel and Inscription House it is difficult to construct or maintain a fence to ensure that no livestock grazing or trampling would occur within park boundaries. Livestock grazing and trampling near Keet Seel and Inscription House have contributed to the growth of arroyos that have adversely impacted open archeological sites on the canyon bottoms, with intensities of impact ranging from moderate to major. Measures such as round-ups and fencing have been taken to

mitigate livestock grazing and trampling and further destruction of cultural resources.

Pollutants and acid rain contribute to the deterioration of pictographs, petroglyphs, and historic inscriptions in each of the monument's units, resulting in minor adverse impacts. With further study the monument might be able to mitigate some of the impact to the pictographs, petroglyphs, and historic inscriptions through treatment (including documentation) and working with businesses in nearby communities. This would provide at least an overall benefit of minor intensity.

Fuel reduction is a part of recurring maintenance at the monument. After completion of an environmental assessment, staff reduced fuels recently at Betatakin to further protect the resource from potential damage caused by fire. Staff would continue to reduce fuels near alcoves with dwellings, resulting in a beneficial effect of moderate intensity. Appropriate site-specific compliance would be undertaken prior to any fuel reduction.

Historic structures located in the administrative area might be adaptively rehabilitated for use in interpretive programs. All work would be done in accordance with the *Secretary of Interior's Standards and Guidelines*, which would result in long-term, adverse impacts of moderate intensity.

ETHNOGRAPHIC RESOURCES

Consultation with associated tribes indicates that pre-contact cliff dwellings, structures, and pictographs and petroglyphs are sacred. The surrounding ethnographic landscape, of which the monument's resources are an integral part, also has significant cultural value to all associated tribes. Under the No-Action Alternative, conditions would remain as they are at the present time, with the exception of the actions common to all alternatives. With the continuation of present conditions, any adverse impacts to ethnographic resources that currently occur would continue to be moderate to major in intensity, long-term in duration, and regional in scope. These effects, such as those from the routine stabilization and maintenance of ancestral sites (adverse to some Hopi), present visitor facilities, visitor access to the dwellings, intrusion on traditional uses of culturally important places or resources, and uncontrolled visitor access or vandalism to archeological sites, would continue. The inability of tribal members to engage in traditional cultural practices due to scheduling conflicts with visitor presence would also constitute an impact that would require development of mitigation measures in consultation with affected tribes.

Any backcountry closures in effect under the No-Action Alternative could have a major to moderate beneficial impact on ethnographic resources by protecting them from the effects of uncontrolled visitation, provided that requests for access to these resources for traditional cultural purposes are considered through the special use permit process. Tribal access to ethnographic resources would also have a beneficial, minor to moderate long-term impact on relationships between tribes and the park, and a better mutual understanding of resources and their management.

Improved visitor understanding of the tribal values ascribed to ethnographic resources as a result of the planning for this GMP would have a moderate beneficial impact if it leads to tribal involvement in planning and design of new interpretive messages under this alternative. Without new interpretive messages, the No-Action Alternative would have a moderate adverse effect on the ways in which information about tribal connections to park resources are presented to

the public, especially American Indian youth learning about their own histories.

MUSEUM COLLECTIONS

Currently, at Navajo National Monument there is a small collection of artifacts and archived materials. These items are stored at the monument in a small collection area. Staff is currently improving the condition of storage and collection space. Most collection items have been transferred to the Western Archeological and Conservation Center. This has resulted in a beneficial moderate effect, since those transferred items are being stored in a safe and maintained area, managed by a professional curatorial staff. With the continued practice of caring for collections at the monument with limited staff, space, and resources, there would be a moderate adverse effect on museum collections.

CUMULATIVE IMPACTS

Cumulative impacts have affected cultural resources both within and outside of monument boundaries. These have included seasonal traffic through and around the monument, contributing to pollution that has impacted pictographs, petroglyphs, and historic inscriptions; visitors hiking to Keet Seel and Betatakin, impacting archeological sites outside of the boundary; traditional cultural practices by local people; collecting in and around the monument; a reduction in the water table that has resulted in the weakening of the alcoves' geologic structure and the growth of arroyos; and the development and cyclic maintenance of the monument. The cumulative impacts have resulted in adverse effects, ranging from minor to major intensity.

With the establishment of Navajo National Monument and the implementation of land use regulations, traditional tribal uses and treatment of resources have been altered over the years. Increased visitor use has interfered with ceremonial activities at certain places within monument lands. Stabilization of archeological sites and opening them to public visitation has violated cultural values about the treatment of ancestral remains. Interpretive messages told stories of the past that differ from tribal knowledge of their own histories.

The cumulative impacts of monument operations on ethnographic resources and the tribes associated with them in the past have been major and long term. Under this alternative, some impacts to ethnographic resources would continue into the future, such as the effects of stabilization and visitor use, but some impacts would be avoided or mitigated by the development of long-term consulting relationships and agreements between the NPS and the tribes. Adverse cumulative impacts would also be reduced by the understanding of tribal cultural values and traditional histories about Navajo National Monument brought about by this planning process, especially if it leads to updated interpretive stories that incorporate tribal versions of their own histories and connections to monument lands and resources.

CONCLUSION

Under Alternative A (no action), there would not be any important changes to current management of cultural resources in the monument. Present staff would continue to implement measures to limit impacts to cultural resources, and long-term management plans would be instituted to better protect and monitor cultural resources. Staff would also work with local residents and businesses to ensure continued protection of cultural resources and to lessen any impacts caused by outside agents like pollution and livestock

grazing and trampling. There would be no impairment of Navajo National Monument's resources and values.

SECTION 106 SUMMARY

In meeting the requirements of Section 106 of the National Historic Preservation Act, monument staff would continue to consult with the Navajo Nation Tribal Historic Preservation Office (THPO) and associated tribes. There would be no important changes under Alternative A in consulting with American Indian Tribes and the THPO. Currently, monument staff consult with the Hopi Tribe, Navajo Nation, San Juan Paiute Tribe, and Zuni Tribe on all projects that occur at the monument. There is a good relationship with cultural resource specialists of each tribe, and the NPS would strive to maintain these relationships, in order to avoid, minimize, or mitigate adverse impacts to cultural resources.

Prior to implementing any of the actions described in the No-Action Alternative, Navajo National Monument's cultural resource staff would identify National Register eligible or listed cultural resources that could potentially be affected by the proposed action and apply the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), all in consultation with Hopi Tribe, Navajo Nation, San Juan Paiute Tribe, and Zuni Tribe, to determine whether or not the proposed action would adversely impact cultural resources. If it is determined that the proposed action would adversely impact National Register eligible or listed cultural resources, monument staff would prepare an environmental assessment to analyze the impacts of the action on the monument's cultural and natural resources, as well as negotiate and execute a memorandum of agreement with the Navajo Nation's tribal historic preservation office, in accordance with 36 CFR Part 800.6[c], *Resolution of Adverse Effects—Memorandum of Agreement*, to stipulate how the adverse effects would be minimized or mitigated. Depending on the cultural resources affected, other associated tribes could also be signatories to the memorandum of agreement.

If it is determined that the proposed action would have *no adverse effect* on National Register eligible or listed cultural resources, monument staff would document this determination on an assessment of effect form and forward the form to the Navajo Nation's tribal historic preservation office and associated tribes for review and comment, as well as inform the Arizona State Historic Preservation Office.

Natural Resources

WATER RESOURCES, WETLANDS, AND FLOODPLAINS

The status of water quality within and around Navajo National Monument is not well studied or documented. Livestock grazing, mostly outside the monument's boundaries, does occur within the watershed environment of both Keet Seel and Inscription House. At the local and regional level, grazing and trampling has long-term, moderate to major adverse effects on water quality by increasing erosion within stream corridors, which then increases sedimentation. Increased sedimentation with accumulations of urine and fecal matter changes water chemistry. Changes in water chemistry with stream trampling (livestock, hikers, and motorized vehicles) over a long period of time can destroy the micro- and macrobiotic communities that help define a healthy riparian system.

Keet Seel appears to be the most affected by all of these outside impacts (especially grazing and trampling) based on qualitative observations of algae blooms throughout the

stream system and continued instability of stream banks. Local and regional adverse effects on water resources are moderate and long term. Remediation of water quality might be possible were all of the outside impacts removed. It is questionable, however, if stream bank stability could be returned to its previous state. In addition, the regional groundwater levels appear to be dropping. If the water table were to drop below ground level, this would have moderate, long-term adverse effects.

Inscription House experiences less visitation and somewhat less grazing and trampling, but the site may be adversely affected by a continued drop in the water table. The impact of the regional water table drop, especially if it disappeared completely underground, would have a moderate to major, long-term adverse effect on wildlife and the native vegetation. Reduced wildlife habitat would result in reduced wildlife populations, and exotic vegetation would continue to invade while the native vegetation that is dependent on moisture would die off. Since the arroyo is so close to Inscription House, this continued excessive erosion could possibly destabilize the entire cliff. This excessive erosion is causing a moderate to major long-term adverse effect.

The reasons for this water table decline are unknown but may be more a result of a regional climatic phenomenon than of introduced factors. Despite the distance between the three units, water table declines appear to be having long-term, moderate, adverse effects on all three sites based on observations of long-term arroyo cutting and historic vegetation changes. There is potential for a minor to moderate long-term adverse effects to the monument's water resources if the coalmine continues or expands its water withdrawals, if local communities grow, and if visitation and numbers of monument personnel increase.

Betatakin may be adversely affected by rain and runoff events where pollutants from the parking lot may be washed down into the groundwater table. Mesa top runoff would result in minor, short-term adverse effects on the water resources. Betatakin's relict forest, particularly the cottonwoods and aspen, could be impacted by an overall groundwater drop. This adverse effect would be local, moderate to major, and long-term because many of the canyon bottom plant species are dependent on water for survival, and the wildlife is dependent on those plant species for forage and nesting. In addition, exotic plants would invade and dominate the site once the native species declined.

Seeps and springs, usually associated with alcoves and sandstone walls, are found in all three units and appear to be in good condition. Normal moisture fluctuations within seeps, and less so with springs, occur based on rainfall infiltration and temperatures. Betatakin has one spring that crosses over a guided trail that did sustain minor trampling during the past summer seasons, resulting in minor, short-term adverse affects locally. That portion of the trail is now closed to the public because of dangerous rockfall conditions, and the spring and associated vegetation has recovered. Closure of the trail resulted in a moderate, long-term beneficial impact on the spring locally and its associated wetland vegetation.

Floodplain degradation is occurring with the above-described conditions involving grazing, trampling, water quality, and increased erosion and sedimentation. This results in local and regionally moderate, long-term adverse effects to the entire watershed system.

The buildings, campground, picnic, housing, maintenance, and parking areas at the headquarters area are not subject to

major arroyo flooding. Flooding on the mesa tops, while a nuisance, is not hazardous and is accommodated by site designs, storm drains, etc. The effects would be local, minor, adverse, and short-term. Flood hazard to hikers to Keet Seel would be moderately adverse and short-term, and would be mitigated by warnings issued to visitors regarding flash floods, quicksand, and unsanitary water conditions when they get a permit to go there. The relocated campground is near the ranger station and substantially above the arroyo, and not likely within the regulatory floodplain.

CUMULATIVE IMPACTS

Over the past decades, water resources and their condition have been adversely affected almost solely by external entities, whether it be Navajo Nation or corporate businesses such as the Black Mesa Coal Company, and natural processes therein such as increased erosion. Past and present uses (hiking, camping, grazing, trampling, and motorized vehicles) by outside entities for both Keet Seel and Inscription House have resulted in long-term, moderate to major losses of native riparian vegetation, increased erosion rates, and decreased water quality.

Owing to the small landownership in three isolated locations with minimal access to water, Navajo National Monument has short-term, minimal adverse impacts to the water resources as a result of hiking, camping, maintenance activities, and the use of motorized vehicles. Past and present visitation and associated use of the existing parking facility at Betatakin has resulted in the potential for runoff of petroleum-based products. These adverse effects have been minor and short term. Erosion associated with new trails, maintenance, and construction projects at all three units would increase sediment runoff, but adverse effects would be minor and short term.

The potential exists for the establishment of new populations of exotic plant species as a result of disturbance to all riparian and wetland areas within and around the monument. This threat would range from minor to moderate over the long term, depending on the level of disturbance and whether exotic species seed sources are already nearby. Two exotic species closely associated with riparian areas, tamarisk and Russian olive, are currently within or nearby each monument unit.

CONCLUSION

Overall, continuation of the present monument activities on water resources would result in locally short-term, minor adverse impacts. However, the activities of external landowners would continue to result in regionally long-term, moderate to major adverse impacts on water resources. There would be no impairment of Navajo National Monument's resources or values.

BIOTIC COMMUNITIES (VEGETATION, WILDLIFE, AND SOILS)

Vegetation and Wildlife

Due to their remote locations, limited access, and low visitation, the three units of the monument probably receive fewer human impacts (hiking, maintenance, and construction) overall to their natural resources than do many other types of National Park Service units. Adverse human impacts to the natural resources tend to be minor and local in the monument, including ethnographic plant collecting and aircraft overflight effects on wildlife. However, grazing and vehicle use at both Keet Seel and Inscription House do have moderate, long-term, adverse effects on the natural resources locally and regionally. Grazing, trampling, and vehicle impacts have disturbed the

landscape so much in certain areas that only exotic plant species are able to survive and the native seed sources are disappearing. Erosion and stream bank collapse would be aggravated by grazing, trampling, hiking, and vehicle use, since all of these activities remove native ground cover. This ongoing erosion and compaction does increase exotic plant invasions (mainly cheatgrass, tamarisk, and Russian olive). Native grasses have already been lost in many of these disturbed areas. Wildlife that may have frequented these areas would have moved into new areas where less vehicle noise, better forage (native plants), and cleaner water can be found.

The natural resources at Betatakin have remained well protected for more than 60 years due to the installation of a boundary fence that effectively sealed off the effects of livestock grazing and trampling from adjacent Navajo Nation land. Adverse human impacts (hiking, maintenance, and construction) are very minor at the present time. Yet, a century of fire suppression has led to a high accumulation of combustible fuels in Betatakin Canyon, so the monument did recently implement a mechanical fuels reduction project to reduce the chance of wildland fire damage to archeological structures. Fuel reduction in the monument is a maintenance activity that would have a moderate, long-term beneficial effect. There would be only short-term, minor, adverse effects on the vegetation and wildlife while the cutting took place, but the oak forest resprouts rapidly and wildlife would be only temporarily displaced. Otherwise, the native plant and animal communities, particularly within the relict forest, are largely self-sustaining and naturally regenerating, a rare find in the semiarid Southwest. Exotics (tamarisk, Russian olive, and cheatgrass) do threaten Betatakin right outside of the fenced boundary, but the potential for adverse impacts is minor at this time, because exotics rarely get established unless an open, disturbed site becomes available.

Soils

Sandstone and shale soils as well as the microbiotic crusts are affected locally in minor, adverse ways at Betatakin by hikers (soil compaction and broken microbiotic crusts) and vehicle vibrations (rockfall). The monument's trail and road maintenance program can result in rockfall, soils, and microbiotic crust disturbance. Generally, these cause minor, short-term adverse effects. Specific construction projects, however, can result in long-term, adverse impacts by destroying the integrity of the microbiotic crusts, which takes years to regenerate and reform. Impacts would be adverse, ranging in intensity from minor to moderate, depending on location and magnitude of the activity (maintenance, construction, or recreational). The duration would range from short- to long-term, depending on the size and intensity of the project. Also, any loss of vegetation during construction projects would result in increased wind dispersal of soils, especially on the mesa tops. This loss of vegetation and subsequent loss of soils would be a moderate, long-term adverse effect, because of the difficulty of restoring these soils and their nutrients. Without these nutrients, revegetation would be less successful.

Mitigation measures used by the monument during maintenance and construction projects include using previously disturbed sites for staging and stockpiling, returning the disturbed site to its previous grade, salvaging of local plants, and revegetating with native species immediately after a project is finished.

Currently hiking, grazing and trampling, and the use of motorized vehicles at Keet Seel and Inscription House have adverse effects on soils around and inside of the riparian

areas. Trampling and compaction due to these uses, especially in wet areas, result in long-term, moderate adverse impacts to soils, both locally and regionally. Soil instability leads to increased erosion in both dry and wet environments. Recovery of stability in sandstone environments is a difficult, if not an impossible outcome, and becomes more difficult the larger the disturbed area becomes.

There may be some minor effects from aircraft noise on stability and rockfall at the monument, but these have not been measured. Impacts from such aircraft noise would be anticipated to be adverse, but minor.

CUMULATIVE IMPACTS

Over the past decades, the conditions of biotic communities (vegetation, wildlife, and soils) within the monument have actually improved at Betatakin, owing to the installation of the boundary fence. The elimination of grazing in this canyon has provided a long-term, major beneficial impact on the biotic communities. However, Keet Seel and Inscription House have been less successful in keeping out external activities, mainly grazing.

Past and present uses (hiking, camping, grazing, trampling, and motorized vehicles) by external entities in both Keet Seel and Inscription House have resulted in long-term, moderate losses of native riparian vegetation, loss of wildlife habitat, increased exotic invasions, and increased erosion rates. These external activities result in regional long-term, moderate to major adverse effects on biotic communities.

CONCLUSION

The overall impact on biotic communities of continuing current monument activities would be local, short term, minor, and adverse. However, the external landowners and their activities would continue to have a regional, long-term, moderate to major adverse impacts on biotic communities. There would be no impairment of Navajo National Monument's resources or values.

THREATENED AND ENDANGERED SPECIES

Navajo sedge has been located on Navajo Nation Lands near the federal unit and monument activities do not directly affect this population. Navajo sedge would continue to experience local, moderate, long-term adverse effects because of grazing and trampling outside the monument. Inventory and monitoring of Navajo sedge is an ongoing activity of the Navajo Nation botanist. The alcove bog orchid was found at Betatakin, but most monument activities do not directly affect these populations because of trail closures. These orchids were protected during the fuel reduction project undertaken in 2000, even though they are relatively resilient to trampling, light grazing, and light-intensity fires. The impacts from fuel reduction were local, minor, and short term. Mitigation would include rerouting maintenance activities so they avoid direct contact with the orchid populations. Initial inventory and monitoring was completed on these orchid populations during 1999 and 2000, and monitoring continues to be an ongoing process.

The Navajo sedge, alcove bog orchid, and northern leopard frog are species dependent on moisture, thus natural changes in moisture, which are out of the monument's control, could have a moderate and long-term adverse effect on these populations. Exotic invasions around Inscription House, but not within the monument boundaries, could slowly out-compete the Navajo sedge population, leading to its demise. Mitigation measures would include fencing off the population from grazing and trampling and controlling exotics nearby.

Currently the monument has guided tours and performs routine maintenance activities at Betatakin and Keet Seel, where there is Mexican spotted owl (MSO habitat). Development of trails and facilities as well as grazing and trampling does impact this species, depending on the time of year. These impacts vary from locally minor to moderate, and short to long term, depending on the activity. Mexican spotted owls were documented in Navajo National Monument from 1989 to 1998, and Navajo Fish and Wildlife designated Betatakin Canyon a protected activity center (PAC) for Mexican spotted owls. Due to the recent designation of critical habitat for the MSO at the monument (February 1, 2001) and the MSO Recovery Plan (1995), the monument would consult with the U.S. Fish and Wildlife Service and the Navajo Nation prior to implementing any trail maintenance, construction, fuel reduction projects, or recreational activities. Mitigation efforts would include implementing projects outside the MSO breeding season (September 1 through February 28). Continued multiagency (NPS, Navajo Nation, and USFWS) monitoring for the MSO at the monument has been recommended, particularly after any mechanical fuel reduction projects.

CUMULATIVE IMPACTS

Over the past decades and currently, threatened and endangered species have been fairly well protected in all three units at Navajo National Monument, because of the units' inaccessibility to the public. Present day activities at the monument would result in local, short-term, minor adverse impacts to such species. However, many of the listed species and species of concern in the vicinity of the monument are either bats or birds, which tend to be migratory during certain times of the year, so the park has no control over any external adverse impacts.

Past and present uses (hiking, camping, grazing, trampling, and motorized vehicles) by various entities in and around the monument are assumed to have regional, long-term, moderate adverse impacts to the Mexican spotted owl, owing to loss of habitat for the owl, loss of habitat for their prey, and loss of solitude during critical periods, such as nesting. The Navajo sedge is at a critical stage on Navajo Nation land, owing to overgrazing and trampling. The alcove bog orchid is assumed to be doing better in the protected fenced canyon of Betatakin than elsewhere on the Navajo Nation lands where grazing and trampling occur.

CONCLUSION

The overall impacts of current monument activities on threatened and endangered species are local, short term, minor and adverse. However, activities of external landowners would continue to have regional, long-term, minor to moderate adverse impacts on threatened and endangered species. There would be no impairment of Navajo National Monument's resources or values.

Visitor Understanding And Experience

Visitor understanding and experience would undergo moderate, adverse, long-term impacts from the dated, inaccurate exhibits, lack of interpretation of American Indian culture, limited access to Betatakin, and structures and trails that do not meet ADA standards. There would also be minor to moderate, long-term, adverse effects from limited access to Keet Seel, and no access to Inscription House. Foreign visitors would suffer long-term minor adverse effects from the lack of foreign language translations, and all visitors would endure short-term, minor, adverse effects from construction projects.

CUMULATIVE IMPACTS

Over the long term, visitor experience and understanding would enjoy a minor-to-moderate beneficial impact from the realignment of the Shonto Road, which would reduce traffic and congestion in the visitor center parking lot. Also, as a result of the paving and realignment of the highway, more visitors might be induced to use the AZ 564-BIA 221 "shortcut" to Page, possibly increasing visitation over the long term.

CONCLUSION

Visitor understanding and experience would suffer moderate, adverse, long-term impacts under Alternative A. There would be no impairment of Navajo National Monument's resources or values.

Remoteness

Remoteness at the headquarters unit would continue to have local, minor, adverse impacts from existing National Park Service development, traffic in the parking lot, visitors on the trails, maintenance activities, aircraft overflights, and local residents in the form of noise, artificial light, and modern human-made structures. NPS maintenance activities that generate noise could be scheduled so as to reduce adverse effects on the natural soundscape at peak visitor periods. There would be local, moderate, short-term, adverse effects on natural soundscapes during future repair or construction projects, such as replacing the waterline.

Remoteness in the backcountry would continue to have local, minor, adverse effects from aircraft overflight noise, occasional local resident vehicle noise, and artificial light from NPS and local residences. Artificial light from NPS residences could be mitigated with directed lighting fixtures to reduce the adverse effects on natural lightscapes.

CUMULATIVE IMPACTS

One foreseeable action adjacent to the monument affecting remoteness is the planned relocation of the Shonto Road by the Bureau of Indian Affairs. There would be short-term, moderate, adverse effects to the natural soundscape during construction. Upon completion of the Shonto Road cutoff, there would be a beneficial, minor, long-term effect of reducing noise and artificial light within the monument, because local traffic now going through the parking lot would be diverted.

Under this alternative, there would continue to be only limited consultation with tribes and others, and there would be little National Park Service influence in protecting the natural soundscape, lightscapes, and scenic vistas from activities on adjacent lands. If aircraft overflights and vehicle tours increase, the cumulative effect on the natural soundscape would be local and moderate. New vendors or businesses on the boundary and access road could have a cumulative moderate to major adverse effect on scenic vistas, natural soundscape, and lightscapes, depending on what would be developed.

CONCLUSION

Under Alternative A, ongoing NPS activities would have a minor, long-term, adverse effect on remoteness. Moderate to major long-term, adverse effects to remoteness could occur from new development or activities on adjacent land. There would be no impairment of Navajo National Monument's resources or values.

Socioeconomic Environment

To calculate the total economic effects of visitor spending on the local economy, visitor data and assumptions were put into the money generation model. All dollar amounts reflect FY2001 dollars.

Visitation is steady at around 66,000 per year, about 30 percent of visitors stay in motels in the local area, and 17 percent camp (the rest are either local visitors or visitors who stay overnight outside of the local area). The overnight visitors spend about 1.5 days in the area, while the day users spend about one day. The money generation model projects that the economic effects of visitor spending multiplied through the local economy would be $2,400,000 in sales, $800,000 in personal income, 68 jobs, and $1,300,000 in value added.

There would also be effects from monument operation and ongoing minor construction projects under this alternative. The staff of 11 permanent and 11 seasonal employees, along with spending on utilities, supplies, and services, all contribute to the local economy. Ongoing repair and rehabilitation projects, totaling some $2,250,000 over the next fifteen years would also create some temporary jobs and cycle money into the local economy. The total effect of operations and construction when multiplied through the money generation model under this alternative would be $2,500,000 in sales, 46 jobs, $1,400,000 in personal income, and $1,600,000 in total value added. The majority of this local, moderate, benefit on the local economy would be short term and would last through the period of construction of new facilities.

CUMULATIVE IMPACTS

Construction of the Shonto Road bypass by the BIA would have minor, short-term, beneficial impacts by creating temporary jobs during construction. The potential local operation of a campground adjacent to headquarters unit would have minor, long-term, beneficial impacts by creating jobs and from campground fees that would eventually be rolled over into the local economy.

CONCLUSION

Under Alternative A, visitors and park operations would have a moderate, beneficial, long-term effect on the socioeconomic environment. There would be no impairment of monument resources.

Monument Operations

Under Alternative A, not building or remodeling the current facilities greatly limits opportunities for outreach and visitor education. Office space is also inadequate, and employees are forced to share areas for projects and general work activities. This creates a safety and fire hazard as employees begin to stack boxes and files where space is available. The adverse impact would be moderate and long term and would affect both public relations and monument operations.

Housing remains an extremely important issue for the park and staff. Two of the trailers have been condemned and removed. Existing, habitable structures are deteriorating and have ongoing problems with rodents. Each available house is occupied, leaving only a one-room cabin for park volunteers, a seasonal workforce of six to ten rangers, and guests. The local communities of Shonto and Kayenta offer little housing for rent or lease for non-Navajo people. This lack of housing would have a profound stifling effect on hiring and retaining

employees and attracting volunteers. This could result in the use of nearby hotels at great expense or in not hiring seasonals, curtailing visitor operations. Lack of adequate housing would result in a long-term, moderate to major adverse impact on park operations.

Park housing and office space do not meet ADA standards. The visitor center has been retrofitted with automatic doors, but other operational facilities and houses have not. Inaccessible facilities would continue to result in adverse long-term, moderate impacts on visitors and staff with disabilities.

Fire protection is inadequate. In 1965 the visitor center building was constructed without internal fire suppression systems. As a result, the building is protected only by handheld fire extinguishers and low-pressured fire hydrants. Fire protection is limited, because the park hydrants don't meet pressure standards and a fire vehicle is not available. Kayenta offers the closest structural fire truck at a response time of one hour. Replacement of the monument's main waterlines, which is scheduled for the fall and winter of 2001, would remedy inadequate water pressure, but inadequate fire preparedness would continue to have a moderate, long-term adverse impact on the monument's ability to protect visitors, staff, irreplaceable museum collection items, and government property from fire.

Police protection is limited because of limited jurisdiction. The monument has commissioned law enforcement rangers, but their authority only extends to monument lands. Tribal police have authority on tribal lands (such as access to Betatakin and Keet Seel) and are located hours away from the monument area. Jusrisdiction at the headquarters unit remains unclear. The continuation of this situation would have moderate, long-term adverse effects on monument operations. A revised Memorandum of Understanding for the headquarters unit may mitigate jurisdiction issues.

Communication systems are slow and out of date, and other equipment is outdated, preventing employees from performing their jobs as efficiently as possible. This would continue to have a long-term, moderate, adverse impact on monument operations.

CUMULATIVE IMPACTS

The present infrastructure is inadequate in meeting the program needs of the current staff. As public expectations grow for educational and community outreach services, the lack of office space and maintenance facilities would constrain what the monument is able to provide. Lack of available housing limits the number of employees who can be housed in the area. At present, the staff is constrained in hiring and is limited in what it can offer the public.

CONCLUSION

The current conditions and limited amount of office space and housing leaves the monument unable to accommodate people with disabilities and unable to accommodate more staff in the future and compromises safety. Inadequate numbers of housing units limits the monument's ability to recruit and retain staff and attract volunteers, thereby limiting the number of programs and projects undertaken during the year. The water wells that provide drinking water for the entire park are antiquated and offer no backup in case of pump failure. Communications systems are inadequate and inefficient, and jurisdictional issues limit law enforcement. The visitor center and residential area have no fire suppression system to protect visitors, museum collections, monument employees, and the equipment and

office supplies. The No-Action Alternative would perpetuate inefficient and inadequate monument operations.

A moderate adverse long term impact on the monument would occur because it would remain difficult for the monument to make needed improvements to infrastructure and visitor facilities at the headquarters unit. One reason is that it is a little more difficult to secure NPS funds for improvements on lands not held in federal ownership. Another reason is that the monument is unable to participate in fully the fee demonstration program, a source of improvements to visitor facilities to many NPS units, because of the inability to collect fees on non-federal land.

Unavoidable Adverse Impacts

Under the No-Action Alternative, the continued use of existing trails to Betatakin and Keet Seel, as well as visitor access to areas of Keet Seel, would adversely affect, both directly and indirectly, archeological resources associated with the sites. In addition, archeological resources adjacent to, or easily accessible from, public access areas could be vulnerable to surface disturbance, inadvertent damage, and possible vandalism.

Erosion and livestock grazing and trampling would continue to result in moderate to major adverse impacts on archeological resources.

Rockfall is a serious threat to Betatakin, Keet Seel, Inscription House, and other cliff dwellings. The alcoves in the monument vary in their stability, but Betatakin's and Snake House's alcoves are especially unstable, with the potential for major, adverse impacts to structures within the cliff dwellings.

Moderate to major adverse impacts to ethnographic resources would result from the lack of updated and culturally appropriate interpretive messages about the tribal histories and values to which the ethnographic resources are related.

Lack of adequate curatorial facilities and staff appropriately trained in curation would continue to have long-term, moderate, adverse impacts upon museum collections.

The Mexican spotted owl, a federally threatened species, nests in Betatakin and Keet Seel Canyons. Human activity in Betatakin Canyon, for example, trail maintenance, fuel reduction activities, or visitor use, would have minor to moderate adverse impacts on the spotted owl; however, nesting has been successful during the years monitored.

Dated, inaccurate exhibits and the lack of proper interpretation of American Indian cultures would continue to have moderate, adverse impacts upon visitor understanding and experience. Visitors with disabilities would experience moderate adverse impacts caused by continued inaccessibility of trails and structures.

Loss in Long-Term Availability or Productivity of the Resource to Achieve Short-Term Gain

Potential short-term effects caused by construction activities on archeological resources would be mitigated by data recovery, resulting in no long-term loss of the site information. The lack of adequate monitoring of cultural resources, especially at Inscription House and Keet Seel, could somewhat reduce the availability of cultural resources for future research, education, and possible interpretation.

As described under "Unavoidable Adverse Impacts," rockfall is a serious threat to Betatakin, Keet Seel, Inscription House, and other cliff dwellings, with the potential for major, adverse impacts to structures within the cliff dwellings.

The lack of a cultural landscape inventory could lead to long-term loss in the integrity of contributing elements to the landscape(s).

Irreversible/Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be reversed, except perhaps in the extreme long-term. This would include, for example, the consumption or destruction of nonrenewable resources such as minerals or the extinction of a species.

Irretrievable commitments of resources are those that are lost for a period of time, as a resource is devoted to a use that simultaneously precludes other uses. For example, if facilities are developed in a forest, the timber productivity of the developed land is lost for as long as the facilities remain.

Archeological resources associated with the sites of Betatakin, Keet Seel, and Inscription House, as well as archeological resources adjacent to or easily accessible from trails and other public access areas, would continue to be vulnerable to surface disturbance, inadvertent damage, and possible vandalism. The loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. Because archeological resources are nonrenewable resources, there would be an irreversible/irretrievable loss of these resources.

IMPACTS OF ALTERNATIVE B—FOCUS ON NPS LAND

Cultural Resources

ARCHEOLOGY, STRUCTURES, AND CULTURAL LANDSCAPES

Preservation maintenance of the dwellings at Betatakin, Keet Seel, and Inscription House, as well as the other pre-contact and historic structures listed on the monument's list of classified structures, would continue as needed, to mitigate wear and deterioration of the structures without significantly altering either their present form or character. All preservation and rehabilitation efforts, as well as daily, cyclical, and seasonal maintenance, would be undertaken in accordance with the *National Park Service's Management Policies, 2001* and DO-28, *Cultural Resource Management Guideline*, as well as the *Secretary of the Interior's Standards for the Treatment of Historic Properties, With Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*.

Archeological resources on the mesa top could be at risk from proposed construction. Known archeological resources would be avoided to the greatest extent possible. If such resources could not be avoided, impacts would be mitigated through data recovery. Impacts would be adverse and range in intensity from minor to major, depending upon the number, importance, and integrity of the resource(s).

The necessity of monitoring construction activities to ensure the protection of archeological resources would be determined on a case-by-case basis by Navajo National Monument's archeologist. If during construction previously unknown archeological resources are discovered, all work in

the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation strategy developed in consultation with the Navajo Nation's tribal historic preservation officer and other associated tribes. In the event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

Although expansion of the visitor center would alter the historic and design integrity of the structure, this would result in only a minor impact to monument resources, as the visitor center was determined ineligible for inclusion on the National Register of Historic Places. The minor impacts would be mitigated by historical and architectural documentation of the existing visitor center prior to expansion.

There would be no impacts to the historic structures listed on monument's list of classified structures (See Table 2.2: List of Classified Structures).

Though potentially important cultural landscapes would be identified, protected, and preserved, increased visitor use, resulting from enhanced interpretation of the monument's resources or the expansion or construction of the visitor center, amphitheater, and parking areas; outdoor exhibits; trailheads, trails, and overlooks; and picnicking and camping sites could result in the overuse and degradation of such contributing landscape features as roads and trails, buildings and structures, and vegetation. Such impacts would be adverse and long-term, ranging in intensity from minor to moderate. However, the monument's enhanced interpretive and educational programs would also increase visitor appreciation of cultural resources and how they are preserved and managed, as well as provide an understanding of how to experience such resources without inadvertently damaging them.

Trails and trailheads would be sited to avoid adversely impacting known cultural resources, including potential cultural landscapes. In addition, the use of appropriate materials and colors for all permanent signs erected would allow the signs to meld as much as possible into the natural surroundings.

Increased and/or unauthorized visitation at Keet Seel, Betatakin, and Inscription House, guided tours of the dwelling interiors at Keet Seel, and overnight camping at Keet Seel, could result in increased deterioration of the ancient dwellings through wear and tear and vandalism—a long-term, adverse impact ranging in intensity from minor to moderate. However, the monument's enhanced interpretive and educational programs would instill an understanding and appreciation of the value of the monument's cultural resources and how they are preserved, as well as provide an understanding of how to experience such resources without inadvertently damaging them. At Keet Seel there would be less impact to the cliff dwelling under Alternative B since visitors would not be permitted in the alcove. This would result in a long-term benefit with moderate intensity. In addition, further studies would occur to determine the carrying capacity of the resources that could result in the imposition of visitation levels or constraints that would contribute to the stability or integrity of the resources without unduly restricting their use or interpretation. Also, through an increase in the number of staff at the monument there would be more regular patrols at each of the units, resulting in a long-term benefit of moderate intensity.

Visitor impacts would range from minor to moderate intensity under this alternative. Unescorted hikers traveling from the visitor center to Betatakin could potentially impact cultural resources. This would occur both on the monument and in nearby areas of Navajo Nation land that the hiker would be traversing. Impacts like leaving the trail to look at archeological remains and removing archeological materials from sites located near the trail would occur since hikers would not be guided by a park ranger. These activities would have the potential to produce moderate, long-term, adverse effects. This could be mitigated to some degree through better signage and relocation of trails away from archeological sites. Another visitor impact would be the relocation of the campground at Keet Seel to inside the monument boundaries. Due to the presence of archeological materials in the Keet Seel unit, construction of a campground would have an impact of moderate adverse effect. This impact could be mitigated to some degree through consultation with tribes and data recovery of archeological sites that might be located within construction boundaries. With the opening of Inscription House to limited guided hikes, there would be the potential for minor to moderate long-term adverse effects to cultural resources due to increased activity in areas where there are open archeological sites. This could be mitigated with the relocation of trails away from archeological sites and the presence of a park ranger to guide visitors to Inscription House.

Natural occurrences would also continue to impact dwellings and open archeological sites at the monument. The most common forms of natural impacts are rockfall and animal activity. Rockfall is a serious threat to Betatakin, Keet Seel, Inscription House, and other cliff dwellings. The alcoves in the monument vary in terms of stability. Betatakin's and Snake House's alcoves are unstable, with the potential for major impacts to structures within the cliff dwellings. Keet Seel's and Inscription House's alcoves are more stable and are more likely to suffer moderate impacts. Moisture that moves through the alcoves and canyon bottoms in the form of runoff or seeps also impacts archeological sites in the monument. In Betatakin seeps have the potential to cause moderate to major impacts to structures in the alcove as well as to buried archeological deposits located below Betatakin. At Keet Seel and Inscription House runoff has the potential to cause moderate impacts to structures roofs, walls, and buried archeological deposits located in the canyon bottoms. There are also major impacts to archeological middens related to cliff dwellings and open archeological sites that are being severely impacted by arroyo cutting in the canyon bottoms. This is most noticeable at Keet Seel and Inscription House, where the potential for adverse impacts is greater. Currently, the archeological middens related to both Keet Seel and Inscription House are being destabilized by arroyo cutting.

Animal activity results in impacts to the cliff dwellings and open archeological sites through nesting and burrowing. Currently, raptors are constructing large nests in Betatakin, impacting roofs and walls with moderate intensity. At Keet Seel and Inscription House rodents burrowing and bats constructing nests in structures have undermined walls and floors, resulting in adverse impacts with moderate intensity. Limited controls have been put in place to remove rodents from archeological sites to other locations, resulting in a beneficial affect with minor intensity. At Keet Seel and Inscription House it is difficult to construct or maintain a fence to ensure that no livestock grazing would occur within park boundaries. Livestock grazing and trampling near Keet Seel and Inscription House has contributed to the growth of

arroyos that have adversely impacted open archeological sites on the canyon bottoms with moderate intensity. Measures have been taken to curb livestock grazing and trampling and further destruction of cultural resources, resulting in a minor beneficial effect.

Pollutants and acid rain deteriorate pictographs, petroglyphs, and historic inscriptions in each of the monument's units with minor impacts. With further study, the monument might be able to mitigate some of the impact to the pictographs, petroglyphs, and historic inscriptions through treatment (including documentation) and working with businesses in nearby communities. Overall, this would provide a long-term benefit of minor to moderate intensity.

Development adjacent to Navajo National Monument could result in long-term, minor to moderate adverse impacts on cultural resources. Navajo National Monument would work with neighboring jurisdictions to ensure that adjacent land management practices do not impair the monument's cultural resources, viewsheds, or distant vistas.

ETHNOGRAPHIC RESOURCES

Consultation with associated tribes indicates that pre-contact cliff dwellings, structures, and pictographs and petroglyphs are sacred. The surrounding ethnographic landscape, of which the monument’s resources are an integral part, also has significant cultural value to all associated tribes. Alternative B would include some of the same moderate adverse impacts to ethnographic resources as would be realized under Alternative A. Existing impacts, such as the routine stabilization and maintenance of ancestral sites, present visitor facilities, visitor access to the dwellings, and intrusion on traditional uses of culturally important places or resources, would continue as described in Alternative A. Navajo National Monument would continue to consult with associated tribes and other concerned individuals to mitigate the intensity of such long-term, adverse impacts.

Beneficial impacts from backcountry closures and continued access to traditional use would be similar to those expected under Alternative A. There would be a moderate, beneficial, long-term impacts from the establishment of the tribal consultation committee, which would mitigate many of the ongoing adverse impacts by improving communication between associated tribes and the National Park Service and resulting in deeper understanding, collaborative solutions, and more sensitive management of traditional uses. There would also be moderate, beneficial, long-term impacts from increased staff and patrol to prevent vandalism to culturally important places or resources.

There would be moderate, short-term adverse impacts to traditional use activities at Betatakin as a result of extending the visitor season and allowing visitors to hike all day long to Betatakin, provided that requests for access to these resources for traditional cultural purposes, are considered through the special use permit process. There would also be moderate, short-term adverse effects to traditional activities on the mesa top as a result of more trails and visitors on the rim (Alternative B proposes the most extensive trails). Navajo National Monument would continue to consult with associated tribes to mitigate the intensity of such long-term, adverse impacts through appropriate scheduling of visitor activities that would take traditional activities into consideration, and the increased tribal consultation in Alternative B would facilitate timely and effective mitigation.

Alternative B would have a moderate beneficial long-term effect on ethnographic resources from expanded

interpretation of contemporary tribal associations with park lands and resources and resulting greater visitor understanding of ethnographic issues. Facilitating greater American Indian participation in the interpretation of ethnographic resources would result in a long-term, beneficial impact to the monument's ethnographic resources. Such actions would support the protection, enhancement, and preservation of ethnographic resources and the continuation of traditional cultural practices, as well as increase non-Indian knowledge and appreciation of American Indian cultures.

MUSEUM COLLECTIONS

Museum collections under this alternative would realize the same beneficial impacts as they would under Alternative A, because of transferring collections to the Western Archeological and Conservation Center. In addition to those benefits identified under Alternative A, Alternative B would provide other benefits in the form of an onsite storage and lab facility for collections and staff dedicated to caring for collections. This would result in a beneficial effect of moderate long-term intensity.

CUMULATIVE IMPACTS

Cumulative impacts would be similar to those identified for Alternative A. However, with the possible increase in visitation to Keet Seel, Betatakin, and Inscription House, there would be an increased impact and the potential for vandalism and deterioration of archeological sites in and outside of monument boundaries. Further development of the monument would also mean an increase in maintenance activity and the use of vehicles that might potentially have adverse effects on archeological sites. These impacts would have an intensity ranging from minor to moderate, long term, given the increase in visitation and development.

CONCLUSION

Cultural resources at Navajo National Monument would benefit in the long term from comprehensive planning, because actions and priorities would be established to clarify management goals, reduce conflict between natural and cultural resources management, and accommodate interpretation, visitor use, and traditional uses with minimum damage to both cultural and natural resources. Greater visitor understanding and appreciation of the resources associated with the monument would also contribute to their protection and preservation. There would be no impairment of Navajo National Monument's resources or values.

SECTION 106 SUMMARY

As in Alternative A, monument staff would continue to meet the guidelines of Section 106 of the National Historic Preservation Act. Given that there would be more development and visitation at the site, there would be increased consultation and more comprehensive planning in coordination with the tribes.

Prior to implementing any of the actions described in Alternative B, Navajo National Monument's cultural resource staff would identify National Register eligible or listed cultural resources that could be potentially affected by the proposed actions and apply the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), all in consultation with the Hopi Tribe, Navajo Nation, San Juan Paiute Tribe, and the Zuni Tribe, to determine whether or not the proposed action would adversely impact cultural resources.

If it is determined that the proposed action would adversely impact National Register eligible or listed cultural resources, monument staff would prepare an environmental assessment to analyze the impacts of the action on the monument's cultural and natural resources and would negotiate and execute a memorandum of agreement with the Navajo Nation's tribal historic preservation office, in accordance with 36 CFR Part 800.6[c], *Resolution of Adverse Effects—Memorandum of Agreement*, to stipulate how the adverse effects would be minimized or mitigated. Depending on the cultural resources affected, other associated tribes could also be signatories to the memorandum of agreement.

If it is determined that the proposed action would have *no adverse effect* on National Register eligible or listed cultural resources, monument staff would document this determination on an assessment of effect form, forward the form to the Navajo Nation's tribal historic preservation office and associated tribes for review and comment, and inform the Arizona State Historic Preservation Office.

Natural Resources

WATER RESOURCES, WETLANDS, AND FLOODPLAINS

In addition to the impacts already discussed in Alternative A, Alternative B proposes more construction at Betatakin and increased visitation over a longer period of time. Since there are no natural or artificial watercourses, including springs, seeps, or arroyos, on the mesa top of Betatakin where the proposed construction and most of the increased visitor use would take place, adverse effects on water resources would be negligible. However tinajas, or temporary postholes, do exist on the mesa top, but there would be negative impacts. In addition, groundwater does not occur near the surface of the mesa and most likely would not be encountered during any construction projects. There could be local short-term, minor adverse effects on water quality due to increased sedimentation spilling down into Betatakin Canyon if a major rain event were to occur while the area was under construction. There would be no Section 404 permitting requirements for the construction included in Alternative B as long as materials are not dredged out of or placed into an arroyo or watercourse during construction.

Increased visitors into Betatakin Canyon could lead to more trail erosion, and that would have locally long-term, minor adverse effects on water quality. Increased vehicle use of the parking lot could increase chemical runoff from the pavement into Betatakin Canyon, but eventual dissolution into the water table would result in local, short-term, minor adverse effects. Increased visitor use at Keet Seel (hiking and camping) could increase the rate of erosion especially around the campground, but this would be minor when compared with the disturbance that already occurs there from continual grazing and trampling. More tours into Inscription House would have local, long-term, minor adverse effects on the already eroded stream banks. Proposed fencing and protective barriers around both Keet Seel and Inscription House would have long-term, moderate beneficial impacts to water quality by eliminating grazing, trampling, and increased erosion within the monument boundaries.

The Storm Water Rule (40 CFR, Parts 122, 123, 124) requires an Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Notice of Intent be submitted to the EPA, with a copy sent to the Arizona Department of Environmental Quality—Water Quality Division, on construction activities, including clearing and grading, that occur on land in excess of five

acres. If fewer than five total acres of land would be disturbed in Alternative B, a NPDES notice of intent would not be submitted to the EPA and the Arizona Department of Environmental Quality—Water Quality Division and a Storm Water Pollution Prevention Plan would not be prepared.

The buildings, campground, picnic area, housing, maintenance, and parking areas at the headquarters area are not subject to major arroyo flooding. Flooding on the mesa tops, while a nuisance, is not hazardous and is accommodated by site designs, storm drains, etc. The effects would be local, minor, adverse, and short-term. Flood hazard to hikers to Keet Seel and Inscription House would be moderately adverse and short-term, and would be mitigated by warnings issued to visitors regarding flash floods, quicksand, and unsanitary water conditions by their guide or when they get a permit to go there. The relocated campground is near the ranger station and substantially above the arroyo, and not likely within the regulatory floodplain.

CUMULATIVE IMPACTS

Over the past decades, water resources have basically stayed the same since the monument has little control over groundwater or watershed waters that flow into these three distinct units, thus the adverse impacts, as mentioned in Alternative A, are local, short term, and minor within the monument boundaries.

Reasonable foreseeable future actions associated with Alternative B, such as expanding existing facilities, would result in slightly more potential for increased localized sedimentation and erosion as a result of the proposed development on the mesa top at Betatakin. Increased visitor use of new and existing trails at all three units of the monument would also result in slightly more potential for increased sedimentation and erosion, which could temporarily adversely affect water quality (both development and recreation). Fencing improvements around Keet Seel and Inscription House to eliminate grazing would have long-term, moderate beneficial impacts to water quality.

CONCLUSION

The overall effect of the proposed increase in monument activities, both construction and visitation, would result in local, short-term, minor adverse impacts on water resources, while protective fencing would have a long-term, moderate beneficial impact. There would be no impairment of Navajo National Monument's resources or values.

BIOTIC COMMUNITIES (VEGETATION, WILDLIFE, AND SOILS)

Vegetation and Wildlife

In addition to the impacts already discussed in Alternative A, because of increased visitation and construction proposed in Alternative B, particularly around Betatakin, there would be long-term, minor to moderate adverse effects on the natural resources. Increased visitation would result in more noise and disturbance to wildlife on top and inside the canyon. This could result in a locally minor adverse effect by displacing some mammals, particularly small mammals. There would be locally moderate adverse effects on birds that might roost and nest in the canyon, displacing them farther away from the monument. There would be a minor, short-term, adverse effect from trails and other construction projects, which would destroy the native vegetation. Mitigation would include revegetating immediately after project completion, utilizing native species. Immediate revegetation minimizes the chance of exotics invading these

disturbed sites. On the other hand, more hardened trails would provide a long-term moderate benefit to the visitors and the monument by allowing them more choices for hiking on the mesa top and keeping them off the native vegetation.

The relocated campground for Keet Seel would open up a new site temporarily to invasion of exotics, causing locally short-term, moderate adverse effects. The monument would mitigate by both hardening the new site and revegetating the old site immediately with native vegetation. It would be a very labor-intensive (multi-year) project to succeed in establishing natives in this isolated location that is already surrounded by exotics.

Increased visitation at Keet Seel and Inscription House would have local, long-term, minor adverse effects on the already disturbed natural resources both outside and inside the monument boundaries. On the other hand, there would be long-term, moderate benefits to the public who may not otherwise have had the opportunity to visit these two sites. Proposed fencing improvements around both Keet Seel and Inscription House to keep grazing out would have long-term, moderate beneficial impacts to the biotic communities. Less livestock would decrease the entry of exotic plants into monument lands.

More park staff would result in a long-term, moderate to major beneficial impact on the natural resources program at the monument. There would be increased educational opportunities and contacts with visitors informing them of the unique ecological quality of these canyons, including the natural soundscape experience found at these remote locations. Increased resource staff would allow for the monument to be proactive in initiating research, inventory, and monitoring of all park resources (water, air, flora, and fauna).

Soils

Locally in Alternative B, there would be short-term, moderate adverse effects on soil stability because of new trails and buildings and more visitors at Betatakin. On the other hand, more hardened and maintained trails could reduce the number of "social" trails (and broken microbiotic crusts), which develop as visitors wander around the open mesa environment, resulting in a long-term, moderate beneficial impact to both soils and visitors.

An increase of visitors at both Inscription House and Keet Seel would have long-term, minor adverse effects on soil stability because more visitors would have the opportunity to go off trail. However, the tours would be guided and more staff would be available to patrol trails, providing a long-term, moderate beneficial impact to both soils and visitors. Proposed fencing improvements around both Keet Seel and Inscription House to keep grazing out would have long-term, moderate beneficial impacts to soils by reducing soil compaction and erosion.

A relocated campground at Keet Seel would have a short-term, minor adverse effect on soil stability around the construction site. Mitigation for both the old and new sites would include salvaging of local native plants, hardening of specific tent sites, and immediate revegetation. As with all soil disturbance that is not revegetated immediately, exotic vegetation has the potential to invade and dominate the native plants. The impacts of exotics invading this remote location would be short term and minor at the new site, provided appropriate mitigation during and after construction is performed.

Mitigation using restoration and native plant revegetation for development projects and trails proposed for all three sites would have short-term, minor adverse effects on the

soils locally. On the other hand, mitigation done immediately and correctly would provide a long-term, major benefit to soil stabilization and health.

CUMULATIVE IMPACTS

Reasonable foreseeable future actions associated with Alternative B, such as expanding existing facilities, would result in more potential for trampling of vegetation and microbiotic crusts, particularly at Betatakin. Increased visitor use of new and existing trails and construction activities would result in local, short-term, minor adverse impacts to the biotic communities by increased trampling and disturbance of vegetation and microbiotic crusts. Increased visitor use and construction activities would also result in local, short-term, minor adverse impacts to wildlife, owing to loud noises temporarily displacing certain species. It is possible that continued increased visitation would result in long-term, moderate impact by permanently displacing wildlife, but some species may become habituated rather than displaced. Protective fencing around Keet Seel and Inscription House would have long-term, moderate beneficial impacts to biotic communities, soils, and wildlife by eliminating livestock grazing, trampling, and disturbance to natural systems.

CONCLUSION

The overall effect of the proposed increase in monument activities on biotic communities would result in local, short-term, minor to moderate adverse impacts, while fencing would result in long-term, moderate beneficial impacts to the resources. There would be no impairment of Navajo National Monument’s resources or values.

THREATENED AND ENDANGERED SPECIES

In addition to the impacts already discussed in Alternative A, increased human presence and noise (hiking, trail maintenance, and construction) in the Mexican spotted owl (MSO) critical habitat which also includes Keet Seel, where grazing and trampling occurs, would have a long-term, moderate adverse effect. These owls have been known not to nest or breed when under stress during certain times of the year. In addition, MSOs can only survive in an area where prey is abundant, thus the smaller rodents are also important to the long-term recovery of the owl. Rodents may also be affected by these disturbances (see Wildlife section). Mitigation would include scheduling all monument activities to occur outside of the MSO breeding season (September 1 through February 28) and monitoring MSO populations to determine if the monument's activities are having any adverse affects.

Increased human presence and noise would have long-term, minor adverse effects on other listed species and species of concern, including all of the transient raptors (bald eagle, peregrine falcon, northern goshawk, ferruginous hawk, and California condor) and potential inhabitants (southwestern willow flycatcher and the black-crowned night heron). All of these birds may want to establish themselves in the monument, however, even present use levels might prohibit them from doing so. It is unknown at this time if the present or increased levels of visitor use adversely affect the establishment of these birds, but the potential exists. Increased activities would also cause short-term, minor adverse effects to all the bat species.

Fencing improvements around Keet Seel and Inscription House to eliminate grazing would have long-term, moderate beneficial impacts to endangered plants and animals. The

relocated campground for Keet Seel would increase the proximity of visitors to the Mexican Spotted owl during sensitive breeding season, resulting in long-term, minor to moderate adverse impacts.

Additional park staff would result in a long-term, moderate to major beneficial impact on the natural resources program at the monument, including addressing threatened and endangered species concerns. Consultation and compliance needs would be better served with a staff person dedicated to the task. Increased staffing would increase educational opportunities to discuss endangered species at the monument. Additional resource staff would allow for the monument to be proactive in initiating research, inventory, and monitoring of not only listed species but of all species of concern.

CUMULATIVE IMPACTS

Reasonable foreseeable future actions associated with the planning for Navajo National Monument's general management plan that could affect threatened and endangered species, such as construction and increased visitation, would result in local short-term, minor to moderate adverse impacts. More visitation would mean more potential for trampling of plants, while noise from both visitation and construction would disrupt certain wildlife species, particularly if they are nesting in the vicinity. Protective fencing around Keet Seel and Inscription House would have long-term, moderate beneficial impacts to threatened or endangered species by eliminating livestock grazing, trampling, and disturbance to natural systems.

CONCLUSION

The overall effect of the proposed increase in monument activities on threatened and endangered species would result in local, short-term, minor to moderate adverse impacts, while fencing would have long-term, moderate beneficial impacts to the resources. There would be no impairment of Navajo National Monument's resources or values.

Visitor Understanding And Experience

Visitor understanding and experience would undergo moderate, long-term, beneficial effects from a longer tour season to Betatakin and Keet Seel, improved access to Betatakin, limited tours to Inscription House, and enhanced exhibits and interpretation of Navajo and Hopi culture.

Visitor understanding and experience would undergo moderate, long-term, beneficial effects for visitors with disabilities because of the greater access and interpretive opportunities that would be provided by expanded interpretive media, enhanced exhibits, and additional staff.

Understanding and experiences for youth would undergo moderate, long-term beneficial effects as a result of improved exhibits and expanded programs on- and off-site.

All visitors would endure short-term, moderate, adverse effects from construction, expansion, and exhibit rehabilitation activities.

CUMULATIVE IMPACTS

Over the long term, visitor experience and understanding would experience a minor-to-moderate beneficial impact from the realignment of the Shonto Road, which would reduce traffic and congestion in the visitor center parking lot. Also, as a result of the paving and realignment of the highway, more visitors may be induced to use the AZ 564-BIA 221 "shortcut" to Page, possibly increasing visitation over the long term.

CONCLUSION

Moderate, long-term, beneficial impacts to visitor experience and understanding would result from implementation of Alternative B. There would be no impairment of Navajo National Monument's resources or values.

Remoteness

Existing development and ongoing activities would continue to have minor, local, adverse effects on remoteness, as described under Alternative A. Alternative B proposes more construction than Alternative A, including remodeling or expanding the visitor center from 5,000 to 6,000 square feet, up to 4.5 miles of new trails on the mesa top, up to four shade structures, two composting toilets, additional NPS residences (increase from seven to nine structures), adding a 3,500 square foot administration building and a 1,000 square foot curatorial building near existing structures, expanded maintenance facilities, and utility upgrades at the headquarters area. Alternative B also proposes construction of a ranger station at Inscription House, a ranger cache at Betatakin, and a campground at Keet Seel. The new construction would cause additional periods of human-caused noise at these locations, but the effects of construction on the natural soundscape would be local, minor, and short term.

The addition of these new structures into the landscape would have a minor, long-term, adverse effect on scenic vistas and lightscapes. This would be mitigated by carefully locating new structures out of important views, selection of materials and colors that blend with the environment, using outdoor lights only where absolutely necessary, and selecting fixtures for necessary lights that direct light downward.

Alternative B proposes the extension of trails of the mesa top by 4.5 miles, which would extend the area where human conversation would interrupt the natural soundscape and would increase the likelihood of visitors in Betatakin Canyon hearing voices from above. In this alternative, more people would be on the Betatakin trail (increase from one tour of 25 people per day to perhaps 100 people per day hiking down independently, and extending the season from three months to five or six months). People would be more dispersed and in the area a greater portion of the year, further affecting the natural soundscape in the backcountry. The numbers to Keet Seel would be kept to 20 per day, but the season would be extended from three months to five or six months. Establishing tours at Inscription House (small guided tours of about 15 people up to two times per week) would introduce human conversation to a very quiet area. These adverse effects would be local and minor. A beneficial, minor effect would be that more visitors would be able to get away from the headquarters area and into the backcountry to have the opportunity to experience the natural soundscape.

CUMULATIVE IMPACTS

The future relocation of the Shonto Road would have the same impacts as described in Alternative A. Potential adverse effects on remoteness of future development and activities on adjacent land would be somewhat less than expected under Alternative A, because the establishment of a tribal consultation committee would provide an opportunity for the NPS to work with tribes toward mutually compatible activities. New development or activities could have minor

or moderate long-term effects on the natural soundscape, lightscape, and scenic vistas.

CONCLUSION

Similar to Alternative A, under Alternative B, existing NPS facilities and ongoing NPS activities would continue to have minor adverse effects on remoteness. In addition, under Alternative B, there would be minor adverse impacts of new construction on remoteness, and they would primarily be short term. A minor beneficial effect is that more visitors would be in the backcountry to experience remoteness. Minor to moderate long-term, adverse effects to remoteness could occur from new development or activities on adjacent land. There would be no impairment of Navajo National Monument's resources and values.

Socioeconomic Environment

To calculate the total economic effects of visitor spending on the local economy, visitor data and assumptions were put into the money generation model. Total visitation under Alternative B would stay at around 66,000 per year, but it is expected that the overnight visitors would stay longer than they would under Alternative A, because of more opportunities on the rim and more opportunities to get to Betatakin, for an average stay of 1.8 days. The money generation model projects that the economic effects of visitor spending multiplied through the local economy would be $2,800,000 in sales, $1,000,000 in personal income, 79 jobs, and total value added of $1,500,000. These effects on the local socio-economy would be beneficial, moderate, local, and long term.

There would also be effects from the monument operation and construction proposed in this alternative. Staff would increase to 16 permanent and 15 seasonal employees, and the gross construction costs of structures and trails at the monument (design costs and fabrication of interpretive materials would not affect the local economy and were not counted) would be $7,750,000. The total effect when multiplied through the money generation model under this alternative would be $8,000,000 in sales, 118 jobs, $3,700,000 in personal income, and $4,400,000 in total value added. The majority of this local, moderate benefit on the economy would be short term, lasting through the period of construction of new facilities.

NPS ownership of the land at headquarters under this alternative would cause a moderate adverse effect from the loss, because any loss of tribal land is unacceptable to many tribal people. Because of the relatively small size of the parcel, 240 acres out of 16,224,896 acres (.0016%) of the Nation land and because it is very localized, the adverse effect from lack of acceptance would be short term.

CUMULATIVE IMPACTS

As expected under Alternative A, construction of the Shonto Road bypass by the BIA would have minor, short-term beneficial impacts by creating temporary jobs during construction. The potential local operation of the campground adjacent to headquarters unit would have minor, long-term beneficial impacts by creating jobs and as a result of money from potential fees entering the local economy.

In Alternative B, previous loss of Navajo Nation land over decades for various governmental and private uses make the loss of any additional tribal lands highly unacceptable to the tribe, so NPS ownership of this small parcel may have a moderate, long-term, adverse effect.

CONCLUSION

Under Alternative B, visitors and park operations would have a moderate, beneficial, long-term effect on the socioeconomic environment and moderate short-term benefits from new construction.

Monument Operations

This alternative would provide for increased staff and facilities, including the development employee housing, remodeling of the visitor center to increase floor space for visitor areas and offices, a new administrative office building, new curatorial workspace and storage, and additional maintenance facilities. There would also be improvements to utilities, fire suppression, and communications systems. These impacts would be beneficial, long term, and major.

The park would build new efficiency apartments and family style housing units, providing for increased employee residency, relieving the monument of its housing burden. Housing would also be designed to meet ADA criteria that no current units meet. An adequate supply of housing units would greatly improve the ability of the monument to recruit and retain employees and to attract volunteers. The impact on monument employees would be beneficial, long term, and major in intensity.

Office space would also be increased, allowing for more work and research space. Storage space would also be included for the monument's artifacts and on-site collections. Remodeling the visitor center would allow the opportunity to install updated computer and inter- and intranet networks in addition to modernizing the phone and fire systems. Fire protection would be greatly improved by rehabilitation of utilities, installation of fire suppression systems in existing buildings, and construction of new offices and housing that fully meets codes. In addition, the park would hire specialized staff to provide for greater resource protection, law enforcement, resource management, and curation of artifacts. Collectively, such improvements would result in long-term, moderate to major, beneficial impact on monument operations.

There would be moderate to major beneficial long-term effects from obtaining the land base of the monument headquarters, because it would be easier for the monument to get funding for the identified needed facilities with NPS ownership of the land. It would also clarify jurisdiction and improve police protection at the headquarters unit.

CUMULATIVE IMPACTS

Improvements in the amount and quality of housing and office space would allow the staff to increase services and programs offered to the public. Increased staffing would allow for greater preservation of vital resources and enhanced educational and outreach opportunities in the future.

CONCLUSION

Under this alternative, the monument would experience long-term, moderate and major benefits due to improved housing and new office space, both of which would meet the increased size of the staff and all ADA mandates. Fire codes would also be met in residential housing and the modernized office infrastructure. Computers and communication systems would be updated to meet demands of the modern workplace. This alternative would improve the efficiency and effectiveness of monument operations.

Unavoidable Adverse Impacts

Increased visitor use of existing trails to Betatakin and Keet Seel and moving the campground at Keet Seel inside of the monument's boundary would adversely affect archeological resources associated with the sites, as well as archeological resources on adjacent Navajo Nation lands. Archeological resources adjacent to, or easily accessible from, public access areas could be vulnerable to surface disturbance, inadvertent damage, and possible vandalism. Disturbance of archeological resources associated with increased visitor access, especially involving potential disturbance of human remains, would constitute a major adverse effect to ethnographic resources and their associated cultural values.

Adverse impacts associated with increased visitation to Betatakin and Keet Seel would be somewhat offset by the beneficial effects resulting from visitors receiving more education and a greater appreciation of monument resources from enhanced interpretation and participation in guided tours. However, the net effect would be an increase in adverse impacts to archeological resources, owing to damage from construction, routine maintenance, increased visitor access and impacts, management actions, and future modifications of roads, trails, and other facilities.

Erosion would continue to have moderate to major adverse impacts on archeological resources, but adverse impacts to archeological resources resulting from livestock grazing and trampling would be less under this alternative than under the No-Action Alternative.

Rockfall is a serious threat to Betatakin, Keet Seel, Inscription House, and other alcove dwellings. The alcoves in the monument vary in terms of their stability, but Betatakin's and Snake House's alcoves are especially unstable, with the potential for major, adverse impacts to structures within the cliff dwellings.

The Mexican spotted owl, a federally threatened species, nests in Betatakin and Keet Seel Canyons. Trail maintenance and fuel reduction activities in Betatakin Canyon would have minor to moderate adverse impacts on the spotted owl. Increased visitor use of Betatakin Canyon, associated with both the increase in the daily amount of time visitors are in the canyon and the longer visitation season at Betatakin, could have a long-term, moderate adverse impact on the spotted owl. However, much of the extended visitation period would occur when nesting activity is absent or completed for the season.

Loss in Long-Term Availability or Productivity of the Resource to Achieve Short-Term Gain

Potential short-term effects caused by construction activities on archeological resources would be mitigated by data recovery, resulting in no long-term loss of the site information.

As described under Unavoidable Adverse Impacts, rockfall is a serious threat to Betatakin, Keet Seel, Inscription House, and other cliff dwellings, with the potential for major, adverse impacts to structures within the cliff dwellings.

Some soils, vegetation, and wildlife habitat would be permanently removed and unavailable for other purposes, due to the construction of trails and facilities. Wildlife habitat or vegetation could also be degraded by providing increased access to undisturbed areas.

Irreversible/Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be reversed, except perhaps in the extreme long term. This would include, for example, the consumption or destruction of nonrenewable resources such as minerals or the extinction of a species.

Irretrievable commitments of resources are those that are lost for a period of time, as a resource is devoted to a use that simultaneously precludes other uses. For example, if facilities are developed in a forest, the timber productivity of the developed land is lost for as long as the facilities remain.

Archeological resources associated especially with the sites of Betatakin , Keet Seel, and Inscription House as well as archeological resources adjacent to or easily accessible from trails and other public access areas would continue to be vulnerable to surface disturbance, inadvertent damage, and possible vandalism. The loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. Because archeological resources are nonrenewable resources, there would be an irreversible/irretrievable loss of these resources.

Some soils, vegetation, and wildlife habitat would be permanently removed to build trails or visitor facilities This would be an irreversible commitment of such resources because it is unlikely that the trails and facilities constructed would ever be abandoned and reclaimed.

The construction of trails and facilities would require considerable amounts of fossil fuels, labor, and construction materials such as wood, aggregate, and bituminous materials. However, these materials are not in short supply, and their use would not have an adverse effect on the continued availability of these resources. Proposed construction would also result in an irreversible commitment, or expenditure, of funds.

IMPACTS OF ALTERNATIVE C (PREFERRED): EMPHASIZE PARTNERSHIPS

Cultural Resources

ARCHEOLOGY, STRUCTURES AND CULTURAL LANDSCAPES

Preservation maintenance of the dwellings at Betatakin, Keet Seel, and Inscription House, as well as the other pre-contact and historic structures listed on the monument's list of classified structures, would continue as needed, to mitigate to the extent possible wear and deterioration of the structures without significantly altering either their present form or character. All preservation and rehabilitation efforts, as well as daily, cyclical, and seasonal maintenance, would be undertaken in accordance with the National Park Service's *Management Policies, 2001* and DO-28, *Cultural Resource Management Guideline,* as well as the *Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.*

Archeological resources on the mesa top could be at risk from proposed construction. Known archeological resources would be avoided to the greatest extent possible. If such resources could not be avoided, impacts would be mitigated through data recovery. Impacts would be adverse and range in intensity from minor to major, depending on the number, significance, and integrity of the resource(s).

The necessity of monitoring construction activities to ensure the protection of archeological resources would be determined on a case-by-case basis by Navajo National Monument's archeologist. If during construction previously unknown archeological resources are discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation strategy developed in consultation with the Navajo Nation's tribal historic preservation officer and other associated tribes. In the event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

Although remodeling of the visitor center would alter the historic and design integrity of the structure, this would result in only a minor impact to monument resources, as the visitor center was determined ineligible for inclusion on the National Register of Historic Places. The minor impacts would be mitigated by historical and architectural documentation of the existing visitor center prior to expansion.

There would be no impacts to the historic structures listed on the monument's list of classified structures (see Table 2.2: List of Classified Structures).

Though important cultural landscapes would be protected and preserved, increased visitor use resulting from enhanced interpretation of the monument's resources or the expansion or construction of outdoor exhibits; trailheads, trails, and overlooks; and picnicking and camping sites could result in the overuse, deterioration, and degradation of such contributing landscape features as roads and trails, buildings and structures, and vegetation. Such impacts would be adverse and long term, ranging in intensity from minor to moderate, depending on the resource(s) affected and their significance. However, the monument's enhanced interpretive and educational programs would also have a long-term, beneficial impact on cultural resources, by increasing visitor appreciation of cultural resources and how they are preserved and managed, as well as providing an understanding of how to experience such resources without inadvertently damaging them.

Animal activity results in impacts to the cliff dwellings and open archeological sites through nesting and burrowing. Currently, raptors are constructing large nests in Betatakin, impacting roofs and walls with moderate intensity. At Keet Seel and Inscription House rodents burrowing and bats building nests in structures have undermined walls and floors, resulting in impacts of moderate intensity. Limited controls have been put in place to remove rodents from archeological sites to other locations, resulting in a beneficial effect with minor intensity. At Keet Seel and Inscription House it is difficult to construct or maintain a fence to ensure that no livestock grazing would occur within park boundaries. Livestock grazing and trampling near Keet Seel and Inscription House have contributed to the growth of arroyos that have adversely impacted open archeological sites on the canyon bottoms with moderate to major intensity. Measures have been taken to curb livestock grazing and trampling and further destruction of cultural resources, resulting in a minor beneficial affect. In Alternative C, however, through greater cooperation with American Indian tribes and local communities, livestock grazing and trampling might be limited or removed from areas affecting Keet Seel and Inscription House units, resulting in a long-term beneficial effect with moderate to major intensity.

Pollutants and acid rain deteriorate pictographs, petroglyphs, and historic inscriptions in each of the monument's units with minor impacts. With further study, the monument might be able to mitigate some of the impact to the pictographs, petroglyphs, and historic inscriptions through treatment (including documentation) and working with businesses in nearby communities. Through greater cooperation with local communities and businesses these resulting beneficial effects could be long term with moderate intensity.

Increased and/or unauthorized visitation at Keet Seel and Betatakin, as well as overnight camping at Keet Seel, could result in increased deterioration of the ancient dwellings—a long-term, moderate adverse impact. Under Alternative C, this could be mitigated to some degree through strong cooperative agreements with American Indian tribes, local communities, other law enforcement agencies, and local families assisting the monument in monitoring and patrolling Betatakin, Keet Seel, and Inscription House units. This would result in a long-term beneficial effect of moderate intensity. There would also be guided tours to Betatakin, thus, limiting any adverse effect to archeological sites on the trail or at Betatakin. In addition, the monument's enhanced interpretive and educational programs would instill an understanding and appreciation of the value of the monument's cultural resources and how they are preserved, as well as provide an understanding of how to experience such resources without inadvertently damaging them. Determining and monitoring the carrying capacity of the resources could result in the imposition of visitation levels or constraints that would contribute to the stability or integrity of the resources without unduly restricting their use or interpretation. By having more hikers going to Betatakin there would be the potential for moderate long-term adverse effects to archeological sites located along the trail. Relocating trail segments so that visitors were no longer traversing across archeological sites could mitigate this. The same is true of Inscription House unit with increased visitation and use of the area. This could result in a moderate long-term adverse effect. However, relocating trail segments so that visitors are no longer traversing on or near archeological sites could mitigate this effect. Also, as a result of an increase in the number of staff at the monument there would be more regular patrols at each of the units, resulting in a long-term benefit of moderate intensity.

Increased activities from partnerships with American Indians would result in adverse effects to archeological resources in and out of the monument boundaries. Horses and vehicles would be kept outside of the monument boundaries, negating any impact. The campground at Keet Seel would remain outside of the monument boundary, negating any impact to cultural resources in the monument. However, this would not reduce any impact to cultural resources outside the monument. At Inscription House there would be more protection through the partnerships in the form of patrols and monitoring of cultural resources, resulting in a long-term benefit of moderate intensity. Also, there would be guided visits by local people to Inscription House, increasing the visitation with some impact to cultural resources outside of the monument boundary and benefiting the cultural resources through increased understanding by local people for the need to protect cultural resources in the area. Both adverse impacts and beneficial-effects associated with increased visitation to Inscription House would be minor.

Development adjacent to Navajo National Monument could result in long-term, minor to moderate impacts on cultural

resources. Navajo National Monument would work with neighboring jurisdictions to minimize the impact of adjacent land management practices on the monument's cultural resources, viewsheds, or distant vistas.

Partnerships with universities and other institutions that facilitate research and monitoring of the monument's cultural resources in line with management objectives would provide long-term moderate beneficial impacts by establishing baseline as well as long-term data on various aspects of theses resources for both interpretive and management goals.

ETHNOGRAPHIC RESOURCES

Consultation with associated tribes indicates that pre-contact cliff dwellings, structures, and pictographs and petroglyphs are sacred. The surrounding ethnographic landscape, of which the monument's resources are an integral part, also has significant cultural value to all associated tribes. Alternative C would include some of the same beneficial and negligible impacts to ethnographic resources as identified under Alternative A. Existing impacts, such as the routine stabilization and maintenance of ancestral sites, present visitor facilities, visitor access to the dwellings, and intrusion on traditional uses of culturally important places or resources, would continue as they would under Alternative A.

Beneficial impacts from backcountry closures and continued access to traditional use would be similar to those described under Alternative A. There would be moderate, beneficial, long-term impacts from the establishment of the tribal consultation committee and from increased staff and patrol, the same as under Alternative B.

There would be moderate, short-term adverse impacts to traditional use activities at Betatakin as a result of extending the visitor season and providing more guided hikes to Betatakin provided that access to these resources for traditional cultural purposes are considered through the special use permit process. There would also be moderate, short-term adverse effects to traditional activities on the mesa top as a result of more trails and visitors on the rim (under this alternative, trails would be expanded more than under Alternative A, but less than under Alternative B). Navajo National Monument would continue to consult with associated tribes to mitigate the intensity of such long-term, adverse impacts through appropriate scheduling of visitor activities to take traditional activities into consideration, and the increased tribal consultation proposed in Alternative C would facilitate timely and effective mitigation.

Alternative C would have a moderate to major beneficial long-term effect on ethnographic resources from expanded interpretation of contemporary tribal associations with park lands and resources and resulting greater visitor understanding of ethnographic issues. Facilitating direct American Indian participation and involvement in the interpretation of ethnographic resources would result in a long-term, beneficial impact to the monument's ethnographic resources. Such actions would support the protection, enhancement, and preservation of ethnographic resources and the continuation of traditional cultural practices, as well as increase non-Indian knowledge and appreciation of American Indian cultures.

MUSEUM COLLECTIONS

Alternative C would provide the greatest protection and care for the museum collections. This would occur since most of the museum collections would be transferred to the Western

Archeological and Conservation Center. This would result in a long-term beneficial effect of major intensity. Also, in Alternative C there would be a small facility at the monument to house collections that need to be stored on site as a result of the request of the monument's archeologist and affiliated American Indian tribes or collections that are in transition from being in the field to being stored at the Western Archeological and Conservation Center. This would result in a long-term beneficial effect with moderate intensity.

CUMULATIVE IMPACTS

Cumulative Impacts would be similar to those identified for both Alternative A and Alternative B. However, under Alternative C, there would be greater impact to cultural resources outside of the monument because of an increase in visitation through the use of horses and vehicles. This would also add to the pollution in the canyons. The impact would be minor to moderate, given the increase in visitation and use of horses or vehicles.

CONCLUSION

Cultural resources at Navajo National Monument would benefit in the long term from comprehensive planning because actions and priorities would be established to clarify management goals, reduce conflict between natural and cultural resources management, and accommodate interpretation, visitor use, and traditional uses with minimum damage to both cultural and natural resources. Greater visitor understanding and appreciation of the resources associated with the monument would also contribute to their protection and preservation. There would be no impairment of Navajo National Monument's resources or values.

SECTION 106 SUMMARY

In meeting the guidelines of Section 106 of the National Historic Preservation Act, Alternative C would be similar to Alternative B, except that under Alternative C, monument staff would be working more closely with the tribes with regard to cultural resources off of the monument, given that NPS activity would be contributing to the adverse effect in the form of horse concessions to Keet Seel.

Prior to implementing any of the actions described in Alternative C, Navajo National Monument's cultural resource staff would identify National Register eligible or listed cultural resources potentially affected by the proposed actions and apply the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.5, *Assessment of Adverse Effects*), all in consultation with the Hopi Tribe, Navajo Nation, San Juan Paiute Tribe, and Zuni Tribe, to determine whether or not the proposed action would adversely impact cultural resources. If it is determined that the proposed action would adversely impact National Register eligible or listed cultural resources, monument staff would prepare an environmental assessment to analyze the impacts of the action on the monument's cultural and natural resources, as well as negotiate and execute a memorandum of agreement with the Navajo Nation's tribal historic preservation office, in accordance with 36 CFR Part 800.6[c], *Resolution of Adverse Effects—Memorandum of Agreement*, to stipulate how the adverse effects would be minimized or mitigated. Depending on the cultural resources affected, other associated tribes could also be signatories to the memorandum of agreement.

If it is determined that the proposed action would have *no adverse effect* on National Register eligible or listed cultural resources, monument staff would document this

determination on an assessment of effect form and forward the form to the Navajo Nation's tribal historic preservation office and associated tribes for review and comment and inform the Arizona State Historic Preservation Office.

Natural Resources

WATER RESOURCES, WETLANDS, AND FLOODPLAINS

In addition to the impacts already discussed in Alternatives A and B, Alternative C would have an additional long-term, major beneficial impact to water resources. Through partnerships and various cooperative agreements, the park staff could increase educational awareness of water quality issues and work with the local community and landowners to minimize and mitigate potential short- and long-term sources of pollution. This is not just an ecological or aesthetic concern, a healthy watershed is essential to the continued survival of the local families and their community businesses.

The backcountry campground at Keet Seel would remain where it is, substantially above the arroyo and likely out of the regulatory floodplain.

CUMULATIVE IMPACTS

Over the past decades water resources (and their present condition) have almost solely been affected by external entities, whether it be Navajo Nation or corporate businesses, such as the Black Mesa Coal Company, and natural processes such as increased erosion. Because of the small areas of landownership in three isolated locations, the activities occurring on Navajo National Monument, such as hiking, camping, maintenance activities, and the use of motorized vehicles, have had and continue to have short-term, minimal impacts to the water resources.

Reasonable foreseeable future actions associated with the planning for Navajo National Monument's general management plan that could affect water resources, such as expanding existing facilities, would have short-term, minor adverse impacts to water resources.

Water pollution issues occurring external to the park would be addressed through cooperative efforts among the National Park Service, associated landowners, State of Arizona, Department of Environmental Quality, and the Navajo Nation. The Water Resources Division of the National Park Service would be implementing a baseline survey on water quality for the monument in the year 2001.

The minor adverse impacts of the preferred alternative, in conjunction with the adverse impacts of other reasonably foreseeable future actions, would result in adverse cumulative impacts to water resources, ranging in intensity from minor to moderate, depending on the scope of the potential actions and their locations. However, the adverse impacts of the preferred alternative would be a relatively minor component of the overall cumulative impact, because of its limited scope.

CONCLUSION

The overall effect of monument activities on water resources would be short term and minor. There would be no impairment of Navajo National Monument's resources or values.

BIOTIC COMMUNITIES (VEGETATION, WILDLIFE, AND SOILS)

Vegetation and Wildlife

In addition to the impacts summarized in Alternative A, Betatakin would have more controlled visitor tours under Alternative C than under Alternative B, and this would have a long-term, moderate to major beneficial effect on the protection and preservation of the natural resources. Keet Seel would have additional adverse impacts by encouraging horse usage as compared to Alternative B, but these impacts would be local and minor, when existing conditions, as described under Alternative A, are taken into consideration.

Increased partnerships would have a moderate to major beneficial impact on the management of the monument's natural resources. The Navajo Nation has a natural resources department that could assist monument staff by providing biological expertise in both research and day-to-day operations. All partnerships would emphasize resource education for the staff, general public, neighbors, and the local community on the importance of protecting these natural systems, which are extremely rare in the Southwest region.

Soils

Increased use of horses and vehicles at Keet Seel along with the normal level of grazing and hiking would result in long-term, moderate adverse effects to soil stability. Horse use, especially in wet conditions, has been shown to cause more damage to soils than hikers, but less than motorized vehicles. However, increased partnerships would allow the monument to educate staff, visitors, and the local community on ways to minimize and mitigate soil disturbance throughout the monument and the region. Such partnership would result in long-term, moderate beneficial impacts on soils.

CUMULATIVE IMPACTS

Reasonable foreseeable future actions associated with Alternative C, such as expanding educational opportunities and partnerships, would result in long-term, moderate beneficial impacts to biotic communities. The minor adverse impacts of the preferred alternative, in conjunction with the adverse impacts of other reasonably foreseeable future actions, would result in adverse cumulative impacts to vegetation, soils, and wildlife, ranging in intensity from minor to moderate, depending on the scope of the potential actions and their locations. However, the adverse impacts of the preferred alternative would be a relatively minor component of the overall cumulative impact, because of its limited scope.

CONCLUSION

The overall effect of the proposed increase in partnerships and educational opportunities would be long term, moderate, and beneficial. There would be no impairment of Navajo National Monument’s resources or values.

THREATENED AND ENDANGERED SPECIES

In addition to the impacts already discussed in Alternatives A and B, increased potential for horse use at Keet Seel would have minor, short-term adverse effects on the Mexican spotted owl (MSO). These impacts would become moderate in intensity if the horses were kept overnight in the existing campground outside the boundary during the sensitive MSO breeding season.

Increasing partnerships in the local community and with other agencies would result in a long-term, major beneficial

effect on listed species and species of concern, and there would be increased opportunities to educate the public on mitigating any adverse impacts. Through a partnership, the monument could develop a systematic monitoring program with the Navajo Nation for all listed species and species of concern.

CUMULATIVE IMPACTS

Reasonable foreseeable future actions associated with Alternative C, such as expanding educational opportunities and partnerships, would result in long-term, moderate beneficial impacts to threatened and endangered species. However, the adverse impacts of the preferred alternative would be a relatively minor component of the overall cumulative impact, owing to the limited scope of the preferred alternative.

CONCLUSION

The overall effect of increased partnerships and educational opportunities on threatened and endangered species would be long term, major, and beneficial. There would be no impairment of Navajo National Monument's resources or values.

Visitor Understanding And Experience

In addition to the impacts already discussed in Alternative B, under Alternative C, visitor understanding and experience would realize the beneficial, minor-to-moderate effect of having more interaction between visitors and local Navajo Nation residents because of potential encouragement of compatible Indian-based tourist services adjacent to the monument.

Visitor understanding and experience would realize a beneficial, minor-to-moderate, long-term effect from the increased presence of employees from the various Southwest Indian Nations working at the park as a result of cooperative programs and projects.

Visitor understanding and experience would have a beneficial, minor-to-moderate, long-term effect from the increased interpretive collaboration between Southwest Indian Nations and NPS interpreters in the development of printed media, videos, exhibits, and waysides.

The understanding and experiences of youth would realize moderate to major long-term effects because of improved exhibits, expanded programs on and off-site, and because of direct involvement of youth in internships, partnerships, and other new programs engaging their direct involvement in the monument.

CUMULATIVE IMPACTS

Over the long term, visitor experience and understanding would experience a minor-to-moderate beneficial impact from the realignment of the Shonto Road, which would reduce traffic and congestion in the visitor center parking lot. Also, as a result of the paving and realignment of the highway, more visitors may be induced to use the AZ 564-BIA 221 “shortcut” to Page, possibly increasing visitation over the long term.

Under Alternative C, the possible use of horses and other Indian Nation concession services (jeeps, four-wheel-drive vehicles) for backcountry transport may have a minor-to-moderate safety impact on visitors.

CONCLUSION

Moderate, long-term, beneficial impacts would result from implementation of Alternative C. Alternative C presents the greatest potential benefits to visitor understanding and

experience. There would be no impairment of Navajo National Monument's resources and values.

Remoteness

Existing development and ongoing activities would continue to have minor, local, adverse effects on remoteness, as in Alternative A. Alternative C proposes more construction than Alternative A, including remodeling the visitor center, adding up to 2.3 miles of new trails on the mesa top, up to two shade structures, one composting toilet, additional NPS residences (increase from seven to nine structures), a 3,000 square foot administration building and a 1,500 square foot curatorial building near existing structures, expanding maintenance facilities, and upgrading utilities at the headquarters area. Alternative C also proposes construction of ranger caches at Inscription House and Betatakin and a staging area at Keet Seel (outside of the boundary). The new construction would cause additional periods of human-caused noise at these locations, but the effects of construction on the natural soundscape would be local, minor, and short term.

The addition of these new structures into the landscape would have a minor, long-term, adverse effect on scenic vistas and lightscapes. This would be mitigated by carefully locating new structures outside of important views, selection of materials and colors that blend with the environment, using outdoor lights only where absolutely necessary, and selecting fixtures for necessary lights that direct light downward.

Alternative C proposes the extension of mesa top trails by 2.3 miles, which would extend the area where human conversation would interrupt the natural soundscape and would increase the likelihood of visitors in Betatakin Canyon hearing voices from above. Alternative C proposes partnerships with local people to establish guided access and tours to the remote sites that would be compatible with the mission of the monument and within current capacities of 1,500 visitors per year for Keet Seel and limited to 25 people per day on one guided hike to Betatakin, as established in the *Backcountry Management Plan* (1995). The season of tours might be extended from three months to five or six months. This would result in greater numbers of people in the backcountry for a longer period of the year, their voices affecting the natural soundscape. These adverse effects would be local and minor. A beneficial, minor effect would be that more visitors would be able to get away from the headquarters area and into the backcountry to have the opportunity to experience natural soundscapes.

While motor vehicles are not permitted within the NPS units of land, it is possible that local guides will use motorized vehicles them to get visitors closer to the remote sites. Noise from such vehicles would have a moderate to major adverse effect on the natural soundscape, and the visibility of such vehicles would have minor to moderate effects on the natural setting. This could be mitigated by establishing good communication in the tribal consultation group and developing agreements with guides that recognize the value of remoteness and outline ways to protect monument sites.

CUMULATIVE IMPACTS

The future relocation of the Shonto Road would have the same impacts as described under Alternative A. Potential adverse effects of future development and activities on adjacent land to remoteness would be somewhat less than those expected for Alternative A, because the establishment of a tribal consultation committee, partnerships, and agreements would provide an opportunity for the NPS to

work with tribes and others toward developing mutually compatible activities. New development or activities could have minor or moderate long-term effects on the natural soundscape, lightscape, and scenic vistas.

CONCLUSION

As under Alternative A, under Alternative C, existing NPS facilities and ongoing NPS activities would continue to have minor adverse effects on remoteness. In addition, under Alternative C, there would be minor adverse impacts of new construction on remoteness, and they would primarily be of short-term duration. A minor beneficial effect would be that more visitors would be in the backcountry to experience remoteness. Minor to moderate long-term, adverse effects to remoteness could occur from new development or activities, such as guided motorized access on adjacent land. Alternative C has the greatest potential of all alternatives to mitigate these impacts through consultation, partnerships, and agreements. There would be no impairment of Navajo National Monument's resources or values.

Socioeconomic Environment

To calculate the total economic effects of visitor spending on the local economy, visitor data and assumptions were put into the money generation model. Total visitation in this alternative would stay at around 66,000 per year, but it is expected that the overnight visitors would stay longer than in Alternative A, because of more opportunities on the rim, more cultural programs and links to American Indians, and more opportunities to get to Betatakin, for an average stay of 2.0 days. The money generation model projects that the economic effects of visitor spending multiplied through the local economy would be $3,100,000 in sales, $1,000,000 in personal income, 86 jobs, and total value added of $1,700,000. These effects on the local socio-economy would be beneficial, moderate, and long term.

There would also be effects from the monument operation and construction proposed in this alternative. Staff would increase to 16 permanent and 16 seasonal employees, and the gross construction costs of structures and trails at the monument (design costs and fabrication of interpretive materials would not affect the local economy and were not counted) would be $7,300,000. The total effect when multiplied through the money generation model under this alternative would be $7,600,000 in sales, 114 jobs, $3,600,000 in personal income, and $4,300,000 in total value added. The majority of this local, moderate, benefit on the local economy would be short term, during the period of construction of new facilities.

As expected under Alternative B, NPS ownership of the land at headquarters under this alternative would cause a moderate adverse effect from the loss, because any loss of tribal land is unacceptable to many tribal people. Because of the relatively small size of the parcel, 240 acres out of 16,224,896 acres (.0016%) of the Navajo Nation land and because it is very localized, the adverse effect from lack of acceptance would be short term.

CUMULATIVE IMPACTS

As expected under Alternative A, construction of the Shonto Road bypass by the BIA would have minor, short-term beneficial impacts by creating temporary jobs during construction. The potential local operation of the campground adjacent to headquarters unit would have minor, long-term beneficial impacts by creating jobs and from money from campground fees entering the local economy.

Previous loss of Navajo Nation land over decades for various governmental and private uses makes the loss of any additional tribal lands highly unacceptable to the tribe, so NPS ownership of this small parcel could have a moderate, long-term, adverse effect on the tribe.

CONCLUSION

Under Alternative C, visitors, park operations, and new construction would have a moderate, beneficial, short- and long-term effect on the socioeconomic environment, and the effects would be very similar to those expected under Alternative B.

Monument Operations

The beneficial effects under Alternative C would be the same as those expected under Alternative B, including increased housing, rehabilitated utilities, accessibility for people with disabilities, expanded maintenance, improved fire protection, a modernized infrastructure, and a federal land base to support these facilities. The beneficial effects of this alternative would be moderate to major and long term.

In addition, partnerships would provide a lot of support to monument operations. The monument would establish volunteer programs to increase the number of local interpreters and craft demonstrators. There would also be the opportunity to involve local volunteers to help monitor cultural and natural resources and help in monument operations. Partnerships would allow enhanced resource protection through increased visitation to backcountry archeological sites, increasing a law enforcement presence, preventing vandalism and illegal entry to the sites. The campground would also have a volunteer host to monitor the campsites and report any emergencies. The establishment and support of partnerships would increase opportunities for community outreach as well as for providing improved emergency services within the monument and surrounding areas. The resultant impact would be long term, beneficial, and moderate in intensity.

CUMULATIVE IMPACTS

Improvements in the amount and quality of housing and office space would allow the staff to increase services and programs offered to the public. Increased staffing would allow for greater preservation of vital resources and enhanced educational and outreach opportunities.

CONCLUSION

The effects of implementing Alternative C would be the same as those expected under Alternative B. In addition, the establishment of partnerships would have beneficial long-term, moderate impacts on monument operations by improving community relationships, extending staff with volunteers, and strengthening visitor services and protection of resources. Benefits would be the long-term community support of fire protection and increased law enforcement from nearby communities.

New housing would allow the monument to house staff, volunteers, and short-term employees. New housing would be built to efficiency standards and would meet ADA mandates. Office space would be enlarged, and a new administration building would be constructed. A new shop would house a fire truck, shop bays, and vehicle storage. The sewage system would be rehabilitated.

Unavoidable Adverse Impacts

Increased visitor use of existing trails to Betatakin and Keet Seel, as well as increased use of horses and vehicles at Keet Seel, would adversely affect archeological resources

associated with the sites, as well as archeological resources on adjacent Navajo Nation lands. Archeological resources adjacent to, or easily accessible from, public access areas could be vulnerable to surface disturbance, inadvertent damage, and possible vandalism. Disturbance of archeological resources associated with increased visitor access, especially involving potential disturbance of human remains, would constitute a major adverse effect to ethnographic resources and their associated cultural values.

Adverse impacts associated with increased visitation to Betatakin and Keet Seel would be somewhat offset by the beneficial effects resulting from visitors receiving more education and a greater appreciation of monument resources from enhanced interpretation and participation in guided tours. However, the net effect would be an increase in adverse impacts to archeological resources because of damage from construction, routine maintenance, increased visitor access and impacts, management actions, and future modifications of roads, trails, and other facilities.

Erosion would continue to have moderate to major adverse impacts on archeological resources. Adverse impacts to archeological resources resulting from livestock grazing and trampling would be fewer under this alternative than under either the No-Action Alternative or Alternative B.

Rockfall is a serious threat to Betatakin, Keet Seel, Inscription House, and other cliff dwellings. The alcoves in the monument vary in terms of stability, but Betatakin's and Snake House's alcoves are especially unstable, with the potential for major, adverse impacts to structures within the cliff dwellings.

The Mexican spotted owl, a federally threatened species, nests in Betatakin and Keet Seel Canyons. Trail maintenance and fuel reduction activities in Betatakin Canyon would have minor to moderate adverse impacts on the spotted owl. Increased visitor use of Betatakin Canyon, associated with both the increase in the daily time visitors would be in the canyon and the longer visitation season at Betatakin, could have a long-term, moderate adverse impact on the spotted owl. However, much of the extended visitation period would occur when nesting activity is absent or completed for the season.

Loss in Long-Term Availability or Productivity of the Resource to Achieve Short-Term Gain

Potential short-term effects caused by construction activities on archeological resources would be mitigated by data recovery, resulting in no long-term loss of the site information.

As described under Unavoidable Adverse Impacts, rockfall is a serious threat to Betatakin, Keet Seel, Inscription House, and other cliff dwellings, with the potential for major, adverse impacts to structures within the cliff dwellings.

Some soils, vegetation, and wildlife habitat would be permanently removed and unavailable for other purposes, due to the construction of trails and facilities. Wildlife habitat or vegetation could also be degraded if increased access to undisturbed areas is provided.

Irreversible/Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be reversed, except perhaps in the extreme long term. This would include, for example, the consumption or destruction

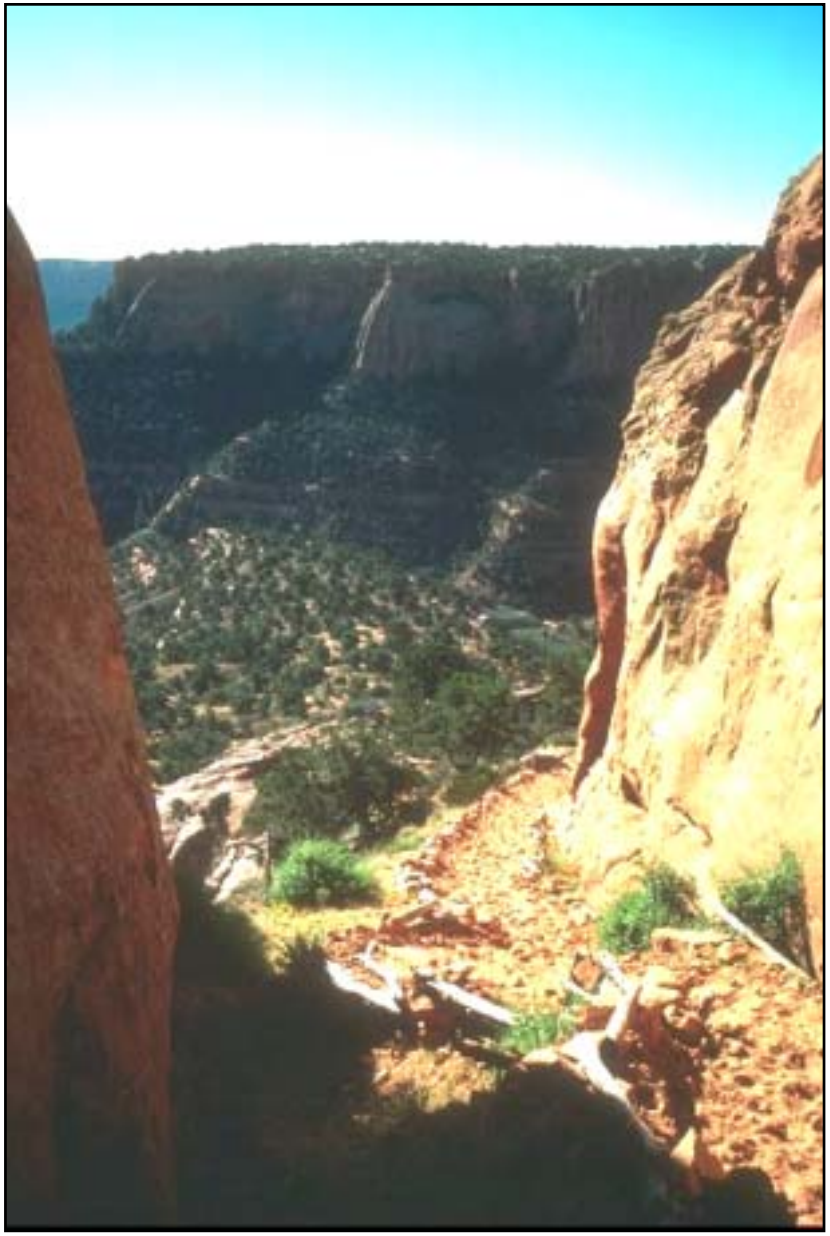
of nonrenewable resources such as minerals or the extinction of a species.

Irretrievable commitments of resources are those that are lost for a period of time, as a resource is devoted to a use that simultaneously precludes other uses. For example, if facilities are developed in a forest, the timber productivity of the developed land is lost for as long as the facilities remain.

Archeological resources associated especially with the sites of Betatakin, Keet Seel, and Inscription House, as well as archeological resources adjacent to or easily accessible from trails and other public access areas, would continue to be vulnerable to surface disturbance, inadvertent damage, and possible vandalism. The loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. Because archeological resources are nonrenewable resources, there would be an irreversible/irretrievable loss of these resources.

Some soils, vegetation, and wildlife habitat would be permanently removed to build trails or visitor facilities. This would be an irreversible commitment of such resources because it is unlikely that the trails and facilities that are constructed would later be abandoned and reclaimed.

The construction of trails and facilities would require considerable amounts of fossil fuels, labor, and construction materials such as wood, aggregate, and bituminous materials. However, these materials are not in short supply, and their use would not have an adverse effect on the continued availability of these resources. Proposed construction would also result in an irreversible commitment, or expenditure, of funds.



SUMMARY OF IMPACTS
NAVAJO NATIONAL MONUMENT GMP

Impact Topic	Alternative A (No Action): Continue Existing Management	Alternative B: Focus on NPS Land	Alternative C (Preferred): Emphasize Partnerships
Concept	Continue existing management.	Focus management on the existing land base to achieve the purposes of the monument.	Manage the existing land base, similar to Alternative B, and look beyond the boundary to accomplish joint purposes through cooperation and partnerships.
Cultural Resources	**General.** Beneficial, moderate, long-term impacts (except to some American Indian tribes) would result from ongoing maintenance and stabilization of ancient structures.	**General.** All structures and archeological sites would have a long-term major beneficial impact resulting from more research, more stabilization and maintenance, and a better understanding of resources by staff and visitors.	**General.** Same as Alternative B, with even greater benefit from the understanding, support, and cooperative activities with neighbors and partners.
	Moderate adverse long-term impacts could result from natural rockfall within the alcove. Moderate adverse impacts would continue to be caused by raptors and rodents. Minor adverse long-term impacts may result from vibrations from traffic and noise transmitted through rock, air pollutants (acid rain on pictographs, petroglyphs, and inscriptions), and research activities.	Adverse impacts would be the same as under Alternative A from rockfall, raptors, rodents, vibration, pollutants, and research.	Adverse Impacts same as Alternative A from rockfall, raptors, rodents, vibration, pollutants, and research.
	Betatakin. A beneficial major long-term impact would result from keeping visitors out of the village and providing minor beneficial impacts from frequent year-round ranger protection from vandalism.	**Betatakin.** Same beneficial impacts as identified for Alternative A.	**Betatakin.** Same beneficial impacts as Alternative A.
	Continued use of the trail to Betatakin Canyon would have moderate, long-term adverse impacts on archeological sites outside of the park boundary on Navajo Nation land.	Use of the trail to Betatakin Canyon by more visitors would be somewhat less directly supervised and could have long-term adverse impacts on archeological sites outside the park boundary on Navajo Nation land. This would be mitigated by rerouting segments of the trail, and the net effect would be minor impacts to archeological resources.	More visitors on the trail to Betatakin Canyon could result in long-term adverse impacts on archeological sites outside the park boundary on Navajo Nation land. This would be mitigated by rerouting segments of the trail and keeping visitors under the direct supervision of a ranger or tour guide. The net effect would be minor impacts to archeological resources.

Impact Topic	**Alternative A (No Action): Continue Existing Management**	**Alternative B: Focus on NPS Land**	**Alternative C (Preferred): Emphasize Partnerships**
Cultural Resources (cont.)	**Keet Seel.** Beneficial moderate long-term impacts would result from ranger presence in the summer months.	**Keet Seel.** A beneficial moderate long-term impact would result from keeping visitors out of the village and providing a longer season of ranger protection from vandalism.	**Keet Seel.** Beneficial impacts would be similar to those identified for Alternative B from providing a longer season of ranger protection from vandalism. In addition, even greater protection from vandalism through agreements with neighbors and tribes.
	Major long-term adverse impacts could result from erosion of archeological sites in the canyon bottom. Moderate adverse long-term impacts to village structures would be caused by continued visitor foot traffic, and to archeological sites from livestock movements. Minor long-term adverse impacts to ancient structures may result from occasional vandalism.	Same adverse impacts as Alternative A, except there would no longer be impacts from visitor foot traffic, which would be eliminated, and impacts from livestock movements would be reduced through NPS actions. Minor to moderate long-term adverse impacts could occur to archeological sites from relocating the campground inside the boundary.	Moderate adverse long-term impacts to village structures would be caused by continued visitor foot traffic. The same adverse impacts as Alternative B, except no new impacts to archeological sites because the campground would stay where it is.
	Curbing grazing and trampling would have a minor beneficial impact.	Greater control of grazing through communication with tribes would have a moderate beneficial impact.	There is the potential to further reduce the impacts of grazing through consultation and partnerships for moderate beneficial impact.
	Inscription House. A beneficial long-term major impact would result from continuing to keep visitors out of the village.	**Inscription House.** Beneficial impacts would be the same as identified for Alternative A, plus there would be a major beneficial impact of more protection of resources from vandalism from increased NPS ranger patrol.	**Inscription House.** Beneficial impacts would be the same as Alternative B, plus even greater protection from vandalism through agreements with neighbors and tribes.
	Major long-term adverse impacts would be caused to archeological sites by the severe erosion occurring in the arroyo and livestock movements. Major long-term adverse impacts to structures would be caused by vandalism.	Major long-term adverse impacts would be caused to archeological sites by erosion, but impacts from livestock movements would be reduced by NPS actions.	Same adverse impacts as Alternative B, plus potential to further reduce the impacts of grazing through consultation and partnerships and have a moderate beneficial impact.
	Curbing grazing would have a minor beneficial impact.	Greater control of grazing through communication with tribes would have moderate beneficial impact.	

Impact Topic	Alternative A (No Action): Continue Existing Management	Alternative B: Focus on NPS Land	Alternative C (Preferred): Emphasize Partnerships
Cultural Resources (cont.)	**Headquarters Unit.** An archeological survey to determine the extent and location of sites on the rim for further protection would have a moderate, beneficial long-term impact. Maintenance and minor construction would have minor to moderate impacts on archeological sites, which would be mitigated. Adaptive reuse of historic structures would have a moderate beneficial impact.	**Headquarters Unit.** Same beneficial impacts as Alternative A.	**Headquarters Unit.** Same beneficial impacts as Alternative A.
		More trails and structures on the rim would have both direct and indirect long-term adverse impacts on archeological sites. The effect would be minor because it would be mitigated by locating trails and other structures out of sensitive areas, and by improving visitor understanding and protection of resources.	Same adverse impacts from construction as Alternative B, but to a slightly lesser extent.
	Museum Collection. There would be beneficial moderate long-term effects of safe storage of most artifacts at WACC and MNA. There would be moderate adverse long-term effects of lack of adequate storage and staff to protect artifacts on site.	**Museum Collection.** Same beneficial impacts as Alternative A. There would be beneficial moderate long-term effects to artifacts from adequate on-site storage, holding area for artifacts undergoing repatriation, lab, and staff.	**Museum Collection.** There would be beneficial major long-term impacts from consolidating most of the collection at WACC or MNA. There would be beneficial moderate long-term effects to artifacts from adequate on-site storage, lab, and staff.
Ethnographic Resources	Moderate to major adverse impacts from routine stabilization, visitor access to the dwellings, and intrusion on traditional uses, or uncontrolled visitor access and vandalism would continue.	Same adverse and beneficial impacts as in Alternative A, mitigated by additional moderate beneficial impacts from improved resource understanding and management from establishment of tribal consultation committee, and more staff to protect resources.	Same adverse and beneficial impacts as in Alternative B, mitigated by additional moderate beneficial impacts as described under Alternative B.
	There would be moderate to major beneficial impacts from backcountry closures. There would be beneficial, minor to moderate long-term impacts of stronger relationships with tribes and better mutual understanding of ethnographic resources and their management from continued tribal access and cultural uses.	There would be moderate short-term adverse impacts to tribal access and cultural uses as a result of extending the visitor season and allowing visitors to hike all day long to Betatakin. This would be mitigated through consultation and scheduling. There would be moderate short-term adverse effects to traditional activities on the mesa top as a result of additional trails and visitors on the rim.	There would be moderate short-term adverse impacts to tribal access and cultural uses from extending the visitor season and providing more daily tours to Betatakin. This would be mitigated through increased consultation and proper scheduling. There would be minor short-term adverse effects to traditional activities on the mesa top as a result of additional trails and visitors on the rim.

Impact Topic	Alternative A (No Action): Continue Existing Management	Alternative B: Focus on NPS Land	Alternative C (Preferred): Emphasize Partnerships
Ethnographic Resources (cont.)	There would be a moderate beneficial impact if the GMP effort resulted in new interpretive messages to the visitor and better visitor understanding and respect for traditional uses. Without these interpretive messages, there would be a moderate adverse effect on understanding by visitors and tribal youth.	There would be a moderate beneficial long-term effect from expanded interpretation of ethnographic resources and the resulting greater understanding by visitors and American Indian youth.	There would be a moderate to major beneficial long-term effect from expanded and direct tribal participation in interpretation of ethnographic resources and the resulting greater understanding on the part of visitors and American Indian youth.
Natural Resources	**Water Resources, Wetlands, and Floodplains.** Trampling, urine, and fecal matter from livestock grazing and trampling on adjacent land would cause long-term, moderate to major adverse effects on stream quality at Keet Seel and Inscription House. Minor to moderate adverse long-term regional impacts of a declining water table would continue, largely from a regional climatic phenomenon. Erosion and arroyo cutting at Keet Seel and Inscription House would cause long-term moderate to major adverse impacts of sedimentation in streams.	**Water Resources, Wetlands, and Floodplains.** There would be adverse effects similar to Alternative A, except there would be opportunities to mitigate impacts of grazing and trampling, vehicles, and horses through better consultation with tribes, and there would be increased short-term moderate adverse impacts from additional construction.	**Water Resources, Wetlands, and Floodplains.** Impacts would be similar to those identified for Alternatives A and B, except there would be an even greater opportunities to mitigate the impacts of grazing and trampling, vehicles, and horses through education, consultation, agreements, and partnerships.
	There would be local, minor, short-term adverse effects on water quality and wetlands from mesa-top runoff into Betatakin. Seeps and springs in Betatakin would realize a beneficial impact from closure of cross-canyon trail. There would be minor, short-term adverse effects from erosion and sedimentation from construction.	Increasing the number of visitors into Betatakin, Keet Seel, and Inscription House would result in an adverse, short-term, minor impact.	
	There would be short-term, minor adverse effects of flooding to facilities on the mesa top. Flood hazard to Keet Seel hikers would be moderately adverse, short-term, and mitigated by warnings.	Same as Alternative A, plus hazard to Inscription House hikers, similar to Keet Seel hazard.	Same as Alternative B
	Vegetation and Wildlife. Livestock grazing and trampling would continue to have a moderate, long-term adverse impact on plants and moderate long-term adverse impacts on wildlife at Keet Seel and Inscription Houses. All sites would have	**Vegetation and Wildlife.** Beneficial impacts from fuel reduction and integrated pest management would be similar to Alternative A.	**Vegetation and Wildlife.** Beneficial impacts from fire management and integrated pest management would be similar to Alternative A.

Impact Topic	**Alternative A (No Action): Continue Existing Management**	**Alternative B: Focus on NPS Land**	**Alternative C (Preferred): Emphasize Partnerships**
Natural Resources (cont.)	and Inscription House. All sites would have continuing moderate, long-term adverse impacts on vegetation from invading exotic plants. Vehicle use in the adjacent canyons would have moderate, adverse, short-term effects on vegetation and wildlife.		
		Livestock grazing and trampling and exotic plants would have similar adverse impacts as in Alternative A, but there would be opportunities to mitigate these impacts through greater tribal consultation.	Livestock grazing and trampling and exotic plant impacts would be similar to Alternative B, and there would be even greater opportunities to mitigate these impacts through tribal consultation, agreements, and partnerships. Possible encouragement of horse use on adjacent land would have local minor to moderate impacts compared to those of grazing and trampling. Would be mitigated by encouraging the use of weed-free hay.
	Fuel reduction and integrated pest management activities would have minor, short-term adverse effects, but in the long term impacts would be moderate and beneficial.		
	Visitors hiking into Betatakin Canyon would have minor short-term adverse effects on wildlife.	An increase in the number of visitors to Betatakin Canyon, their presence for a longer period of the day and a longer part of the year, could result in minor adverse short-term impacts from trampling of vegetation and disruption of wildlife. Effects to ethnographic resource would be the same as described for Alternative A.	Visitor impacts to wildlife and vegetation in Betatakin Canyon would be similar to Alternative B, but there would be more mitigation as a result of more controlled visitation because tours would be completely guided.
	Construction at the headquarters area would have short-term, local minor adverse effects on vegetation, and temporary, minor adverse effects on wildlife.	Construction at the headquarters area would have short-term, local moderate adverse effects on vegetation, and temporary, minor adverse effects on wildlife. Additional well-defined trails would have a beneficial impact of keeping visitors off of vegetation and away from wildlife. Construction of the primitive campground at Keet Seel would have minor short-term adverse effects on vegetation and wildlife.	Construction at the headquarters area would have short-term, local moderate adverse effects on vegetation, and temporary, minor adverse effects on wildlife similar to Alternative B, but less extensive.

Impact Topic	Alternative A (No Action): Continue Existing Management	Alternative B: Focus on NPS Land	Alternative C (Preferred): Emphasize Partnerships
Natural Resources (cont.)		There would be a major beneficial long-term impact from increased staff to monitor and protect resources.	Major beneficial long-term impact from increased staff to monitor and protect resources. Moderate beneficial long-term impact from greater opportunity to educate the public on natural resource issues and cause actions to better protect them.
	Soils. Erosion from livestock grazing and trampling, hiking, horses, and motorized vehicles would cause long-term, minor adverse effects to microbiotic crusts at Betatakin, and moderate long-term adverse effects at Keet Seel and Inscription House. Fuel reduction actions and construction would cause local, minor, short-term adverse effects to soils.	**Soils.** Impacts would be similar to Alternative A, plus there would be additional adverse short-term moderate impacts to the headquarters unit soils from more construction of buildings and trails at headquarters and a primitive campground at Keet Seel, and indirect long-term moderate impact to soils from increased trail shortcuts. There would be a moderate, beneficial long-term impact to soils as a result of more people staying on more well-defined and better patrolled trails. There would be opportunities to mitigate the impacts of grazing and trampling, horses, and vehicles on soils through increased tribal consultation.	**Soils.** Impacts would be similar to Alternative B, plus there would be an even greater opportunity to mitigate the impacts of livestock grazing and trampling, horses, and vehicles through consultation, agreements, and partnerships.
	Threatened and Endangered Species. Navajo sedge would continue to have moderate, long-term adverse effects from livestock grazing and trampling outside the boundary.	**Threatened and Endangered Species.** Adverse impacts would be similar to Alternative A for Navajo sedge, bog orchids, and Mexican Spotted owl.	**Threatened and Endangered Species.** All of the adverse impacts would be similar to Alternative B, except the campground would not be relocated.
	Minor and short-term adverse effects to alcove bog orchids in the monument would continue to occur from NPS fuel reduction actions. Mitigation measures would be undertaken.	The increase in visitors to Betatakin, increase in the daily time period people would be in the canyon, and the longer season, along with continued grazing near Keet Seel and relocation of the campground and activities on adjacent land would have a moderate and possibly long-term adverse effect on the Mexican spotted owl. Mitigation of impacts to owls would be accomplished through consultation and scheduling potentially disruptive activities outside of breeding season. Increased tribal consultation could mitigate impacts of grazing and trampling.	A major long-term beneficial impact would be the mitigation of these impacts that could come from agreements, partnerships, consultation, and public education.

Impact Topic	Alternative A (No Action): Continue Existing Management	Alternative B: Focus on NPS Land	Alternative C (Preferred): Emphasize Partnerships
Natural Resources (cont.)	Activities on adjacent land and outside grazing and trampling would have minor to moderate short-term adverse impacts on the Mexican spotted owl. Mitigation of impacts to owls would be accomplished through consultation and by scheduling potentially disruptive activities outside of breeding season.	Increased activity may prevent the Southwestern willow flycatcher and transient raptors from re-establishing in Betatakin Canyon, and would cause minor short-term adverse effects to all of the bat species.	Development of an agreement with the Navajo Nation could mitigate adverse impacts to the Navajo sedge.
Visitor Understanding and Experience	There would be moderate, adverse, long-term impacts from dated, inaccurate exhibits, lack of interpretation of Navajo and Hopi cultures, limited access to Betatakin, and structures and trails that do not meet ADA requirements. There would be minor to moderate long-term adverse effects from limited access to Keet Seel, and no access to Inscription House. There would be minor adverse effects from language translation problems, and short-term minor adverse effects from construction projects.	There would be moderate, long-term, beneficial effects from a longer visitor season to Betatakin and Keet Seel, improved access to Betatakin and Inscription House, enhanced exhibits and interpretation, greater opportunities for people with disabilities, more staff to meet visitor needs, and more interaction between visitors and local people at Inscription House.	There would be the same beneficial impacts as expected under Alternative B, plus a beneficial minor to moderate effect of even more interaction between visitors and local people because of potential encouragement of compatible Indian-based tourist services adjacent to the monument.
	There would be a long-term, beneficial minor effect from reducing local traffic from the parking area when BIA relocates the Shonto Road.	There would be short-term, moderate, adverse effects from construction activities. Effects of relocating Shonto Road would be the same as identified for Alternative A.	Effects of construction and the relocation of the Shonto Road would be the same as described under Alternative A.
Remoteness	**Natural Soundscapes.** Local short-term minor adverse impacts would continue at the headquarters area (and down into Betatakin Canyon) from aircraft, traffic in the headquarters area parking lot, NPS maintenance activities, and visitor voices on the trails.	**Natural Soundscapes.** There would be similar adverse impacts as described in Alternative A, but with increased visitor voices on trails and into Betatakin Canyon. The effects would still be minor, short-term and local. A beneficial, minor effect would be that more visitors would have the opportunity to experience the natural soundscape on rim trails and to Betatakin.	**Natural Soundscapes.** Impacts at headquarters and Betatakin would be similar to those identified for Alternative B.
	There would be short-term moderate adverse impacts from construction. Future relocation of the Shonto Road by BIA would reduce traffic noise in the monument.	The adverse effects from construction noise would be similar to those described for Alternative A, with a longer duration, that would still be moderate and short-term.	Construction impacts would be similar to Alternative B.
	There would be short-term, moderate adverse effects of noise in the backcountry from activities on adjacent land.	Effects of noise in the backcountry would be similar to Alternative A, except there would be an opportunity to mitigate local	Impacts to the backcountry would be similar to those expected under Alternative B, with greater opportunities for mitigation

Impact Topic	**Alternative A (No Action): Continue Existing Management**	**Alternative B: Focus on NPS Land**	**Alternative C (Preferred): Emphasize Partnerships**
		resident vehicle noise through tribal consultation.	through tribal consultation, agreements, and partnerships.
Remoteness (cont.)	**Natural Lightscapes.** NPS and local residences have a minor, long-term, local adverse effect. This could be mitigated by installing directed lighting fixtures. Local traffic through the headquarters unit has some minor, short-term adverse effects on lightscapes, but would be mitigated when the BIA relocates the Shonto Road out of the monument. Potential development along the entrance road or immediately adjacent to the park would have moderate long-term adverse effects on natural lightscapes.	**Natural Lightscapes.** Impacts to lightscapes would be similar to those described for Alternative A, except there would be opportunities through tribal consultation to encourage the use of directed lighting fixtures by local residents and potential future development.	**Natural Lightscapes.** Light impacts would be similar to those described under Alternative B, except there would be expanded opportunities to encourage the use of directed lighting fixtures by local residents and potential future development through tribal consultation, agreements, and partnerships.
	Scenic Vistas. Existing park development at headquarters, the hogan at Keet Seel, and scattered local structures have minor, local, long-term adverse impacts on the remote and undeveloped character of the landscape.	**Scenic Vistas.** Additional NPS construction at headquarters and minor structures at Betatakin, Keet Seel, and Inscription House would increase the human-made environment, but the effects would still be minor, local, long-term and adverse. Mitigation would include keeping the scale small, locating structures out of scenic vistas and selecting materials and colors that blend with the landscape.	**Scenic Vistas.** Impacts of NPS development and mitigation would be similar to those described for Alternative B.
	Potential future development along the entrance road or on adjacent land would have a moderate to major impact on scenic vistas and the remote, undeveloped landscape.	Potential future development could have adverse effects similar to Alternative A, but could be mitigated by working with tribes to minimize visual impacts to scenic vistas.	Potential future development could have effects similar to Alternative B, but could be further mitigated by working with tribes and developing agreements and partnerships to minimize visual impacts to scenic vistas.
Socio-Economy	There would be beneficial, local, moderate long-term effects of 101 permanent jobs and 11 seasonal jobs, as well as from visitor spending at local businesses. There would be minor, short-term local beneficial effects from construction jobs, both NPS and the BIA Shonto Road relocation. There would be a local beneficial minor effect if the campground adjacent to the headquarters unit were locally managed. Tourism would have a beneficial	The beneficial impacts would be the similar to those described for Alternative A, but with more jobs: 16 permanent and 14–16 seasonal. There would also be visitors to Inscription House, providing a beneficial impact to markets nearby. There would be more construction than in Alternative A, resulting in minor to moderate short-term beneficial effects.	The beneficial impacts would be similar to those described for Alternative B, but total jobs would include 16 permanent and 15–17 seasonal employees. There would be additional moderate beneficial long-term effects from partnerships encouraging complementary businesses outside of the park.

Impact Topic	**Alternative A (No Action): Continue Existing Management**	**Alternative B: Focus on NPS Land**	**Alternative C (Preferred): Emphasize Partnerships**
Socio-Economy (cont.)	Tourism would have a beneficial, moderate, long-term effect locally and regionally. Projections of Money Generation Model—multiplier effect of visitor spending on the local economy: • Sales—$2,400,000 • Personal income—$800,000 • Jobs—68 • Value added—$1,300,000	NPS ownership of the land at headquarters would have a moderate long-term adverse effect. Projections of Money Generation Model—multiplier effect of visitor spending on the local economy: • Sales—$2,800,000 • Personal income—$1,000,000 • Jobs—79 • Value added—$1,500,000	NPS ownership of the land at headquarters would have a moderate long-term adverse effect. Projections of Money Generation Model—multiplier effect of visitor spending on the local economy: • Sales—$3,000,000 • Personal income—$1,000,000 • Jobs—86 • Value added—$1,600,000
Monument Operations	There would be moderate, major, long-term, adverse impacts from inadequate employee housing, inadequate office space, housing and office space that does not meet ADA requirements, inadequate infrastructure, inadequate computer and communication systems, inadequate funding for current operations, and lack of fire protection combined with limited police protection.	There would be beneficial, long-term moderate to major effects from improved housing and office space that meets ADA requirements, rehabilitated infrastructure, updated computer and communication systems, adequate operational funding, and improved fire protection. There would be moderate to major beneficial long-term effects from obtaining the land base of the monument headquarters.	The beneficial effects would be the same as described under Alternative B, plus partnerships would have a beneficial, moderate, long-term effect on police and fire protection, as well as assisting with operations and resource protection. A volunteer in the campground would have minor, beneficial effects. There would be moderate to major beneficial long-term effects from obtaining the land base of the monument headquarters.

NOTICES AND NEWSLETTERS

The planning process formally began when the notice of intent to prepare an environmental impact statement was published in the *Federal Register* on October 27, 1999. The first newsletter was distributed in November 1999, to announce the beginning of the planning process, summarize the process and schedule, confirm the purpose and significance of the park, and invite people to submit their vision for the future of the park and identify issues. Comments were received regarding the purpose and significance, as well as regarding resource protection, access, jobs, and relationships with American Indian tribes.

A second newsletter was released in May 2000. It presented the issues raised by responses to the first newsletter, goals for the plan, and three draft alternative concepts. The alternatives were framed around the central question of providing more access to remote sites, or limiting access and providing visitor understanding through other means.

A. No action—continue existing management

B. Greater access and variety of experiences

C. More guided tours while emphasizing protection of resources

Response was split quite evenly between keeping things the way they are (Alternative A), or providing more access (Alternative B), with no one supporting the middle ground between them (Alternative C).

One of the main assumptions of the draft alternatives in the second newsletter was greater access to Betatakin by reopening the lower portion of the Aspen Forest Trail. Studies in the summer of 2000 revealed that there are at present no safe, practical routes down the head of the canyon. The planning team refocused the alternatives to reflect other options, as well as incorporate ideas from expanded American Indian Consultation.

VISITOR USE SURVEY

A visitor use survey was conducted from August 1999 to August 2000. Two questions were intended to help guide the planning effort. One asked what is special about Navajo National Monument, and responses included the wholeness and beauty of the landscape, the cliff dwellings and artifacts, cultures, nature, interpretation, and facilities. Another question asked what is most important to you when planning for the future of the monument. Responses included preservation, more access, more limited access, the remote experience, interpretation, cultures, and facilities.

AMERICAN INDIAN CONSULTATION

During initial scoping, local chapters of the Navajo Nation were visited by a member of the planning team to inform people of the beginning of the planning process, to distribute newsletters, and gather comments. Inscription House Chapter, Shonto Chapter House, Tonalea Economic Development Planning Committee, and the Navajo Mountain Chapter House were visited in October and December 1999.

About 30 leaders of American Indian tribes were invited to a consultation meeting in Kayenta, Arizona, on January 20,

2000. The meeting was attended by members of the Hopi and the Navajo Tribes. Discussion included concerns regarding the Native American Graves Protection and Repatriation Act, ethnographic resources, resource preservation, differing viewpoints of tribes and Euro-American culture, access over tribal lands, tribal relations, and local governance.

The 30 tribal leaders were invited again to a consultation meeting in Kayenta, Arizona, May 10, 2000, to discuss the draft alternatives presented in the second newsletter. The meeting was attended by members of the Hopi, Navajo, and Zuni Tribes. Discussion included conflicts between residents and visitors, law enforcement and jurisdiction issues, Inscription House, specific concerns of each tribe, and future consultations.

Revised draft alternatives were presented at the Shonto Chapter House (with the invitation extended to Inscription House Chapter and Navajo Mountain Chapter) on February 24, 2001. There was interest in partnerships and economic development.

The park superintendent offered additional opportunities for further consultation with affiliated tribes, and additional consultations were held with Hopi, San Juan Paiute, and Zuni tribal members between January and July 2001.

SECTION 106 CONSULTATION

Section 106 of the National Historic Preservation Act of 1966 (16USC270, et seq.) requires that for any action that affects cultural resources either listed in or eligible for listing in the National Register of Historic Places and afford the Navajo Nation's tribal historic preservation officer, associated tribes, and the Advisory Council on Historic Preservation opportunities to comment. The THPO, the Advisory Council, and associated tribes have had opportunities to participate in the planning process since initial scoping.

CONSULTATION FOR SPECIES OF CONCERN

The Endangered Species Act of 1973 (16USC1531, et seq.) must ensure that any action taken by a federal agency does not jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modifications of critical habitat. Section 7 requires that federal agencies consult with the U.S. Fish and Wildlife Service (USFWS) to make that determination. Information regarding threatened, endangered, proposed, and candidate species occurring in the area were obtained from the USFWS in July 2000 (Appendix D). Additional information regarding species of concern was obtained from the Navajo Fish and Wildlife Department of the Navajo Nation in August 2000 (Appendix D).

AGENCIES AND ORGANIZATIONS TO WHICH THIS DOCUMENT WAS SENT

AMERICAN INDIAN TRIBES WITH POTENTIAL CULTURAL ASSOCIATION TO THE MONUMENT

The Hopi Tribe
Kaibab Band of Paiute Indians
Las Vegas Paiute Tribe
Moapa Band of Paiutes
The Navajo Nation
Paiute Indian Tribe of Utah
Pueblo of Acoma
Pueblo of Cochiti
Pueblo of Isleta
Pueblo of Jemez
Pueblo of Laguna
Pueblo of Nambe
Pueblo of Picuris
Pueblo of Pojaque
Pueblo of San Felipe
Pueblo of San Ildefonso
Pueblo of San Juan
Pueblo of Santa Ana
Pueblo of Santa Clara
Pueblo of Santa Domingo
Pueblo of Tesuque
Pueblo of Taos
Pueblo of Zia
Pueblo of Zuni
San Juan Southern Paiutes
Southern Ute Tribe
Ute Mountain Ute Tribe

FEDERAL AGENCIES

Advisory Council on Historic Preservation

U.S. Department of the Interior

- Bureau of Indian Affairs (Window Rock, AZ)
- National Park Service
  - Glen Canyon National Recreation Area
  - Flagstaff Areas
  - Petrified Forest National Park
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

U.S. SENATORS AND REPRESENTATIVES

U.S. Representative J. D. Hayworth
U.S. Senator Jon Kyl
U.S. Senator John McCain

STATE AGENCIES

Arizona Department of Environmental Quality
Arizona Ecological Services Field Office
Arizona Game and Fish Department
Arizona State Parks—State Historic Preservation Office

LOCAL GOVERNMENTS

Inscription House Chapter House
Kayenta Chapter House
Kayenta Township
Navajo Mountain Chapter House
Shonto Chapter House

ORGANIZATIONS

National Parks and Conservation Association
Southwestern Parks and Monument Association

NAVAJO NATIONAL MONUMENT,
ARIZONA.

By the President of the United States of America.

A Proclamation

WHEREAS, a number of prehistoric cliff dwellings and pueblo ruins, situated within the Navajo Indian Reservation, Arizona, and which are new to science and wholly unexplored, and because of their isolation and size are of the very greatest ethnological, scientific and educational interest, and it appears that the public interest would be promoted by reserving these extraordinary ruins of an unknown people, with as much land as may be necessary for the proper protection thereof;

Now, therefore, I, WILLIAM H. TAFT, President of the United States of America, by virtue of the power in me vested by Section two of the Act of Congress approved June 8, 1906, entitled, "An Act for the Preservation of American Antiquities", do hereby set aside as the Navajo National Monument all prehistoric cliff dwellings, pueblo and other ruins and relics of prehistoric peoples, situated upon the Navajo Indian Reservation, Arizona, between the parallels of latitude thirty-six degrees thirty minutes North, and thirty-seven degrees North, and between longitude one hundred and ten degrees West and one hundred and ten degrees forty-five minutes West from Greenwich, more particularly located along the arroyas, canyons and their tributaries, near the sources of and draining into Laguna Creek, embracing the Bubbling Spring group, along Navajo Creek and along Moonlight and Tsegi-at-sosa canyons, together with forty acres of land upon which each ruin is located, in square form, the side lines running north and south and east and west, equidistant from the respective centers of said ruins. The diagram hereto attached and made a part of this proclamation shows the approximate location of these ruins only.

Warning is hereby expressly given to all unauthorized persons not to appropriate, excavate, injure or destroy any of the ruins or relics hereby declared to be a National Monument, or to locate or settle upon any of the lands reserved and made a part of said Monument by this proclamation.

In Witness Whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington, this 20th day of March in the year of our Lord one thousand nine hundred and nine, and of the Independence of the United States the one hundred and thirty-third.

[SEAL.]

WM H TAFT

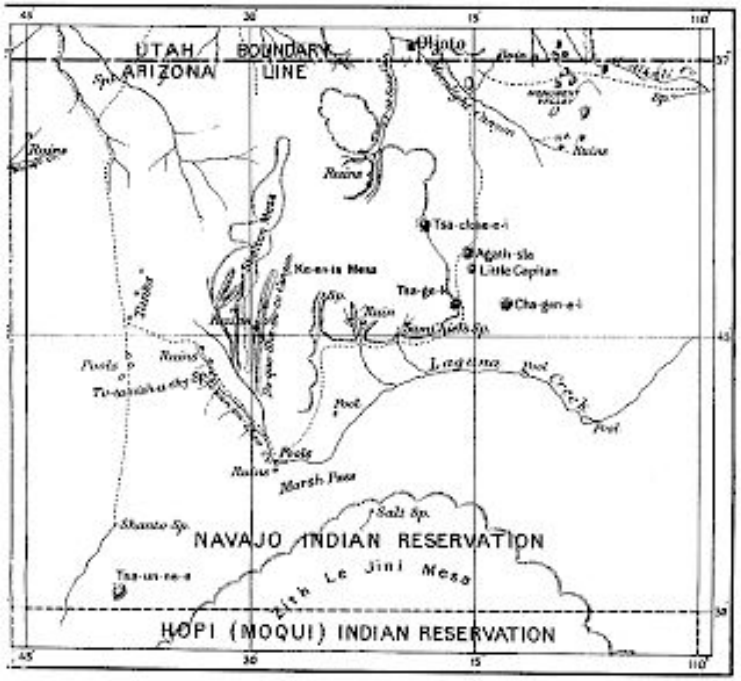
By the President:
P C KNOX
Secretary of State.

[No. 873.]

NAVAJO NATIONAL MONUMENT

Embracing all cliff-dwelling and pueblo ruins between the parallel of latitude 36°30' North and 37 North and longitude 110° West and 110°45' West from Greenwich with 40 acres of land in square form around each of said ruins

ARIZONA



DEPARTMENT OF THE INTERIOR
GENERAL LAND OFFICE
Fred Dennett, Commissioner

SECOND PROCLAMATION.

NAVAJO NATIONAL MONUMENT.

ARIZONA.

By the President of the United States of America.

A Proclamation

WHEREAS, the Navajo National Monument, Arizona, created by proclamation dated March 20, 1909, after careful examination and survey of the prehistoric cliff dwelling pueblo ruins, has been found to reserve a much larger tract of land than is necessary for the protection of such of the ruins as should be reserved, and therefore the same should be reduced in area to conform to the requirements of the act authorizing the creation of National Monuments:

Now, therefore, I, WILLIAM H. TAFT, President of the United States of America, by virtue of the power in me vested by Section two of the act of Congress entitled, "An Act for the Preservation of American Antiquities", approved June 8, 1906, do hereby set aside and reserve, subject to any valid existing rights, as the Navajo National Monument, within the Navajo Indian Reservation, two tracts of land containing one hundred and sixty acres each, and within which are situated prehistoric ruins known as "Betara Kin" and "Keet Seel", respectively, and one tract of land, containing forty acres, and within which is situated a prehistoric ruin known as "Inscription House". The approximate location of these tracts is shown upon the diagram which is hereto attached and made a part of this proclamation.

Warning is hereby expressly given to all unauthorized persons not to appropriate, excavate, injure or destroy any of the ruins or relics hereby declared to be a National Monument, or to locate or settle upon any of the lands reserved and made a part of this Monument by this proclamation.

In Witness Whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this 14th day of March, in the year of our Lord one thousand nine hundred and twelve, and of the Independence of the United States the one hundred and thirty-sixth.

[SEAL.]

WM H TAFT

By the President:

HUNTINGTON WILSON

Acting Secretary of State.

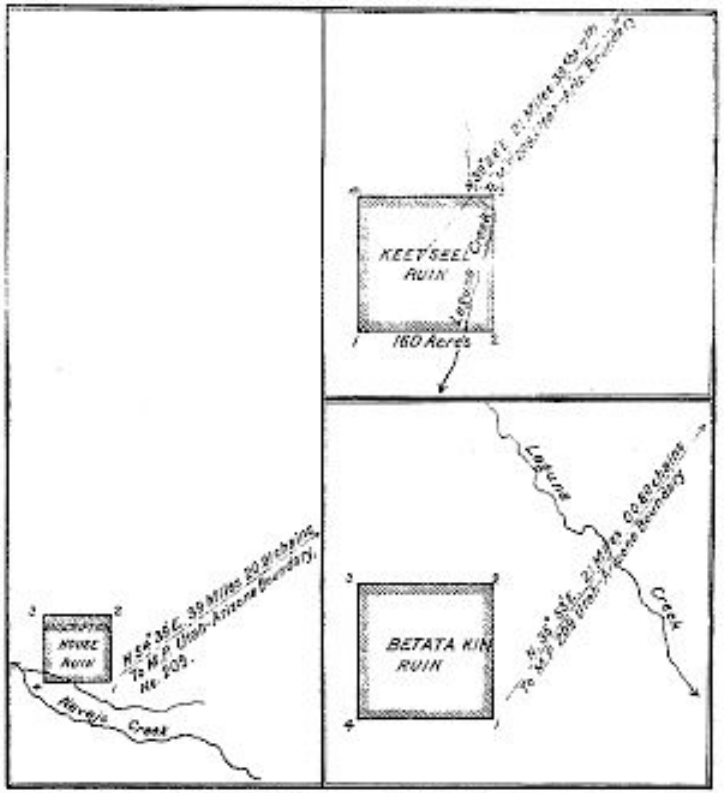
[No. 1186.]

NAVAJO NATIONAL MONUMENT

Embracing the Keet Seel and Betata Kin Ruins, located in two small tracts of 160 Acres each, along Laguna Creek, and Inscription House Ruins on Navajo Creek in a 40 acre tract all within the Navajo Indian Reservation.

ARIZONA

Total area 360 Acres



DEPARTMENT OF THE INTERIOR

GENERAL LAND OFFICE

Fred Dennett, Commissioner

APPENDIX B: MEMORANDUM OF AGREEMENT OF MAY 8, 1962

Between the Navajo Tribe, Bureau of Indian Affairs, and National Park Service Relating to the Recreational Development of the Navajo National Monument

MEMORANDUM OF AGREEMENT OF MAY 8, 1962
BETWEEN THE NAVAJO TRIBE, BUREAU OF INDIAN AFFAIRS, AND NATIONAL PARK SERVICE
RELATING TO THE RECREATIONAL DEVELOPMENT OF THE NAVAJO NATIONAL MONUMENT

WHEREAS, it is in the public interest to facilitate recreational development of The Navajo National Monument through the construction of administrative, residential, and related facilities on lands adjacent to the existing Betatakin Section of Navajo National Monument and to construct and maintain an access road to the Betatakin Section. In order to accomplish these purposes, a cooperative agreement must be entered into between the Navajo Tribe, the Bureau of Indian Affairs, and the National Park Service.

WHEREAS, under the Act of August 7, 1946 (Public Law 633, 79th Congress) appropriations for the National Park Service are authorized for the administration, protection, improvement and maintenance of areas devoted to recreational use pursuant to cooperative agreements under the jurisdiction of other agencies of the government.

WHEREAS, agreement has been reached among The Navajo Tribe, the Bureau of Indian Affairs, and National Park Service, specifying that legislation will be sought to authorize the inclusion of certain lands within the boundaries of other agencies of the government.

WHEREAS, agreement has been reached among The Navajo Tribe, the Bureau of Indian Affairs, and National Park Service, specifying that legislation will be sought to authorize the inclusion of certain lands within the boundaries of The Navajo Reservation, and providing for the granting of a right-of-way for a new access road to Navajo National Monument.

NOW THEREFORE, The Navajo Tribe, the Bureau of Indian Affairs and National Park Service, do hereby mutually agree as follows:

1. This agreement will be regarded as an interim arrangement to permit the National Park Service to proceed with programmed development of Navajo National Monument pending the enactment of legislation providing a permanent basis and authority for such development.

2. This agreement shall apply to the lands within the proposed road right-of-way as shown on the attached drawing NM-NAV-3000[1] and to the lands indicated within the proposed boundary on the attached drawing NM-NAV-7102[1] and which are further described as follows:

Beginning at Corner No. 4 of the existing 160 acre tract set aside as the Betatakin Section of Navajo National Monument, thence north along the west boundary of said area a distance of 1,320 feet, thence west a distance of 1,320 feet, thence south a distance of 3,960 feet, thence east a distance of 2,640 feet, thence north a distance of 1,320 feet, thence east a distance of 1,320 feet, thence north a distance of 1,320 feet to Corner No. 1 of the existing Betatakin Section of Navajo National Monument, thence west along the south boundary of said area to Corner No. 4, the Point of Beginning, enclosing a tract of land of 240 acres, more or less.

3. While it is understood that the current status of the above described lands in regard to The Navajo Tribe and the Bureau of Indian Affairs shall remain unchanged, and that such lands shall remain subject to all laws applicable thereto, it is agreed by The Navajo Tribe and Bureau of Indian Affairs that the above described lands will be devoted primarily to recreational use in connection with the operation of Navajo National Monument.

4. Subject to the availability of funds, the National Park Service may and will undertake the development, construction and maintenance of facilities on the lands referred to in Item 2 above, needed in the proper management of Navajo National Monument as a unit of the National Park System.

5. The National Park Service will assume responsibility for the park facilities of the aforementioned lands and improvements incident thereto.

6. This agreement shall become effective upon approval by the Secretary of the Interior, and shall remain in force and effect until terminated by mutual agreement or until enactment by Congress of legislation inconsistent herewith.

1/ On file in the Washington Office.

ORGANIZATION
Cooperative Agreements and Historic Site Designation Orders
Agreements with Department of the Interior
Bureau of Indian Affairs

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7. The National Park Service agrees that in consideration f the execution of this agreement by The Navajo Tribe that it will assist in every manner possible in supporting legislation providi for the conveyance to The Navajo Tribe by the Bureau of Reclamati of a certain area at Antelope Creek, Coconino County, State of Arizona, to be utilized by The Navajo Tribe as a recreational facility.

8. The Navajo Tribe reserves the right, during the term of this agreement, to operate an arts and crafts enterprise with Navajo National Monument, notwithstanding the maintenance of facil ities thereon by the National Park Service.

SUBMITTED:

Date: May 29, 1961 — (SGD) PAUL JONES, THE NAVAJO TRIBE

Date: Sep 21 1961 — (SGD) JAMES F. CANAN, BUREAU OF INDIAN AFFAIRS

Date: Dec. 12, 1961 — (SGD) THOMAS J. ALLEN, NATIONAL PARK SERVICE

RECOMMENDED:

(SGD) JOHN O. CROW, ACTING COMMISSIONER, BUREAU OF INDIAN AFFAIRS — May 8, 1962 (Date)

(SGD) THOMAS J. ALLEN, REGIONAL DIRECTOR, NATIONAL PARK SERVICE — January 16, 1962 (Date)

(SGD) CONRAD L. WIRTH, DIRECTOR, NATIONAL PARK SERVICE — May 8, 1962 (Date)

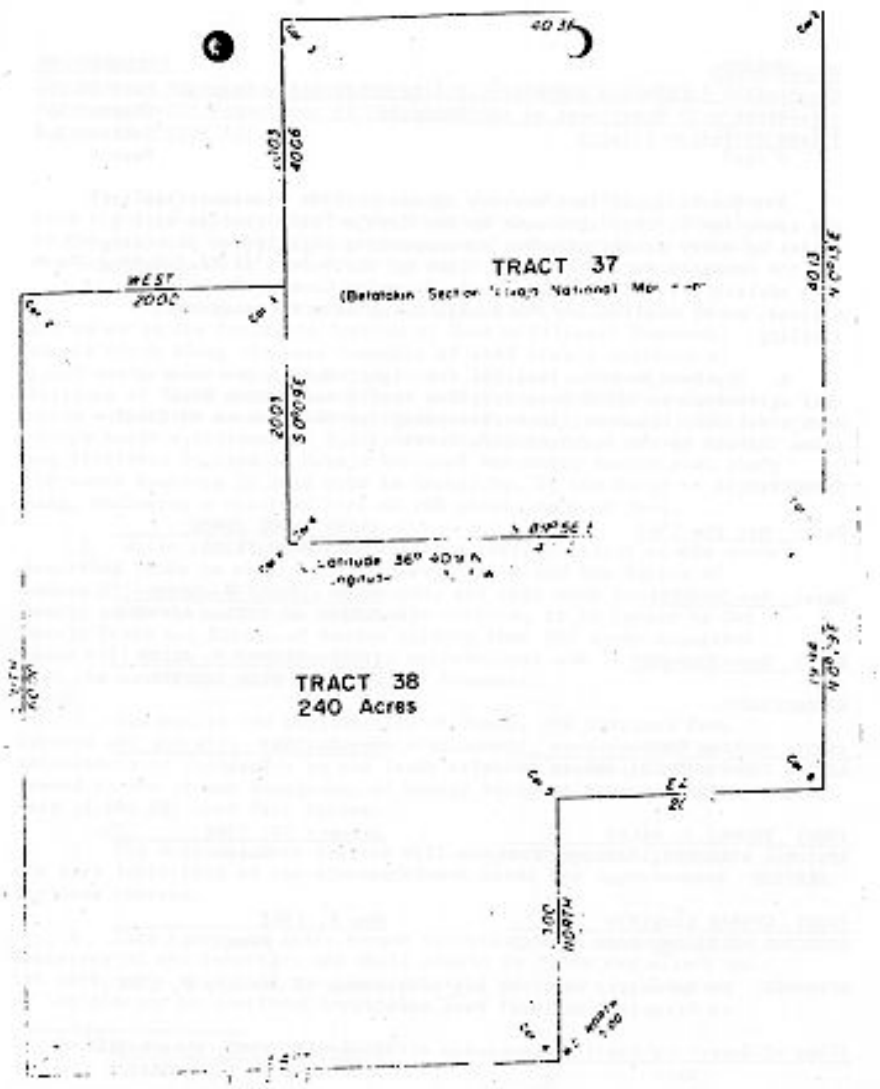
APPROVED: By Secretary Udall by his memorandum of January 8, 1962 to Director, National Park Service.

(Copy of Secretary Udall's memorandum of January 8, 1962, attached). — SECRETARY OF THE INTERIOR
Date

1/ On file in the Washington Office.

Release No. 29 — June 1962

104P0-62



APPENDIX C: SELECTION OF THE PREFERRED ALTERNATIVE

An important step in the planning process is the selection of a preferred alternative. The planning team evaluated the draft alternatives utilizing a process called "Choosing by Advantages " (CBA). This process is used extensively by government agencies and the private sector to make complex decisions. It identifies and compares the relative advantages of each alternative and is based on values that are made explicit and are derived from the goals of the project, public comments, consultations, and laws and policies. Cost is a consideration—cheapest is not always best, but the process helps identify the best value for the money. The CBA process also provides a systematic way to look for improving the preferred alternative by incorporating the important advantages of other alternatives.

PROCESS

The CBA was conducted by members of the planning team and included two NPS superintendents from nearby parks. The process began with reviewing the purpose and significance of Navajo National Monument, the stakeholders and their points of view, the alternatives and their differences, and relevant laws, policies, or other constraints. Factors were developed that reflect the values expressed in this discussion and were used to compare the alternatives:

Resource Protection

- Protect resources from visitor impacts and with increased monitoring and patrol (factor includes primarily natural and cultural resources and ethnographic resources and use).
- Protect remoteness (dark night skies, natural soundscape, vistas).
- Protect collection; promote knowledge.

Visitor Experience/Understanding

- Visitor experience—improve in front country and extend opportunities to remote sites. Improve understanding.

Operational Efficiency

- Operations—ability to efficiently and effectively manage the monument.
    - Facilities
    - Staff
    - Fees
    - Land base/agreements
    - Good relations with tribes, neighbors
- Recruit and retain local employees.
- Visitor safety.

For each factor, the team identified the advantages of an alternative based on specific characteristics or consequences of that alternative. Each advantage was given a point value that reflected its importance when compared with the advantages of the other alternatives. By adding up the advantage scores for each alternative, the team was able to determine which alternative had the greatest total importance of advantages. Alternatives were then graphed to illustrate the best combination of greatest advantages for the least cost, or the best value.

RESULTS

Alternative C emerged as having the greatest total advantages and good value for the cost. It was further refined to incorporate some of the advantages of Alternative B to expand the preferred alternative presented in this plan, and to provide the best future for Navajo National Monument. The main reasons this alternative was selected are:

- Alternative C is strongest on protection of natural and cultural resources and remoteness because it addresses the threats emanating from beyond NPS-controlled land. It is these threats that pose the greatest long-term resource protection problem, and by involving the surrounding communities and the American Indian tribes, Alternative C provides for a holistic and sustainable approach to resource and remoteness protection that has the potential to positively impact both the resources of the monument and the surrounding Indian Nation lands and communities.
- Alternative C provides the greatest opportunity to improve visitor understanding of the many cultures through a variety of perspectives provided by greater consultation with and direct involvement of affiliated tribes. Connections between visitors and resources, visitors and the local community, and the local community and the monument would be strengthened. Resource protection would be enhanced by fostering these connections.
- For the reasons given above, Alternative C is also the environmentally preferred alternative. The environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in section 101 of the National Environmental Policy Act. Ordinarily, this means the alternative that would cause the least damage to the biological and physical environment; it also means the alternative that would best protect, preserve, and enhance historic, cultural, and natural resources.
- The consolidation of the museum collection provides the best protection and value to research and science. There may be more costs associated with this than have been identified, and extensive consultation with institutions and tribes will be required, but long-term benefits include greater accountability, maximum physical protection, single point of access for research, and involvement of American Indian tribes in collection management.
- Alternative C received support in American Indian consultations.

APPENDIX D: LETTERS REGARDING SPECIES OF CONCERN

United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 640-2720 FAX: (602) 640-2730

In Reply Refer To:
AESO/SE
2-21-00-I-124

July 19, 2000

Memorandum

To: Laura E. Hudson, Natural Resource Specialist, National Park Service, Denver, Colorado

From: Field Supervisor

Subject: Section 7 Consultation for Navajo National Monument's General Management Plan/EIS

This memorandum responds to your July 5, 2000, request for an inventory of threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may potentially occur in your project area (Navajo County). The attached list may include candidate species as well. We hope the attached county list of species will be helpful. In future communications regarding this project, please refer to consultation number 2-21-00-I-124.

The attached list of the endangered, threatened, proposed, and candidate species includes all those potentially occurring anywhere in the county, or counties, where your project occurs. Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Also on the attached lists are the Code of Federal Regulations (CFR) citation for each list and is available at most public libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency must request formal consultation with the Service. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency must enter into a section 7 conference with the Service. Candidate species are those which are being considered for addition to the list of threatened or endangered species. Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, the Service recommends the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways or excavation in waterways, we recommend you contact the Army Corps of Engineers which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona protects some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species in your project area.

The Service appreciates your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact Tom Gatz.

David L. Harlow

Attachment

cc: John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: NAVAJO

06/22/2009

1) LISTED

TOTAL= 11

NAME: NAVAJO SEDGE *CAREX SPECUICOLA*

STATUS: THREATENED CRITICAL HAB: Yes RECOVERY PLAN: Yes CFR: 50 CFR 19373, 5-8-85

DESCRIPTION: PERENNIAL FORB WITH TRIANGULAR STEMS, ELONGATED RHIZOMES. FLOWER: WHITE JUNE AND JULY

ELEVATION RANGE: 6700-8000 FT.

COUNTIES: COCONINO, NAVAJO, APACHE

HABITAT: SILTY SOILS AT SHADY SEEPS AND SPRINGS

DESIGNATED CRITICAL HABITAT IS ON THE NAVAJO NATION NEAR INSCRIPTION HOUSE RUINS. FOUND AT SEEP SPRINGS ON VERTICAL CLIFFS OF PINK-RED NAVAJO SANDSTONE.

NAME: PEEBLES NAVAJO CACTUS *PEDIOCACTUS PEEBLESIANUS VAR PEEBLESIANUS*

STATUS: ENDANGERED CRITICAL HAB: No RECOVERY PLAN: Yes CFR: 44 FR 61922, 10-09-1979

DESCRIPTION: VERY SMALL GLOBOSE 1 INCH TALL AND ABOUT 0.75 INCH IN DIAMETER. THE 4 (3-5) RADIAL SPINES ARE ARRANGED IN A TWISTED CROSS AND CENTRAL SPINES ARE ASSENT. FLOWERS YELLOW-GREEN 1 INCH DIAMETER SPRING.

ELEVATION RANGE: 5400-5500 FT.

COUNTIES: NAVAJO

HABITAT: GRAVELY SOILS OF THE SHINARUMP CONGLOMERATE OF THE CHINLE FORMATION

EXTREMELY LIMITED GEOGRAPHIC RANGE. DIFFICULT TO GROW IN CULTIVATION.

NAME: BLACK-FOOTED FERRET *MUSTELA NIGRIPES*

STATUS: ENDANGERED CRITICAL HAB: No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67

DESCRIPTION: WEASEL-LIKE. YELLOW BUFF COLORATION WITH BLACK FEET, TAIL TIP, AND EYE MASK. IT HAS A BLUNT LIGHT COLORED NOSE AND IS 15-18 INCHES LONG AND TAIL LENGTH IS 5-6 INCHES.

ELEVATION RANGE: <10,500 FT.

COUNTIES: COCONINO, APACHE, NAVAJO

HABITAT: GRASSLAND PLAINS GENERALLY FOUND IN ASSOCIATION WITH PRAIRIE DOGS

UNSURVEYED PRAIRIE DOG TOWNS MAY BE OCCUPIED BY FERRETS OR MAY BE APPROPRIATE FOR FUTURE REINTRODUCTION EFFORTS. THE SERVICE DEVELOPED GUIDELINES FOR SURVEYING PRAIRIE DOG TOWNS WHICH ARE AVAILABLE UPON REQUEST. NO POPULATIONS OF THIS SPECIES CURRENTLY KNOWN TO EXIST IN ARIZONA.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: NAVAJO

06/22/2009

NAME: APACHE (ARIZONA) TROUT *ONCORHYNCHUS APACHE*

STATUS: THREATENED CRITICAL HAB: No RECOVERY PLAN: Yes CFR: 40 FR 29864, 07-16-1975

DESCRIPTION: THIS YELLOWISH OR YELLOW-OLIVE CUTTHROAT LIKE TROUT HAS LARGE DARK SPOTS ON BODY. ITS DORSAL, ANAL, AND CAUDAL FINS EDGED WITH WHITE. IT HAS NO RED LATERAL BAND.

ELEVATION RANGE: >5000 FT.

COUNTIES: APACHE, GREENLEE, GILA, GRAHAM, NAVAJO

HABITAT: PRESENTLY RESTRICTED TO COLD MOUNTAIN STREAMS WITH MANY LOW GRADIENT MEADOW REACHES

OCCUPIES STREAM HABITATS WITH SUBSTRATES OF BOULDERS, ROCKS, AND GRAVEL WITH SOME SAND OR SILT THROUGH MIXED CONIFER AND SPRUCE-FIR FORESTS, AND MONTANE MEADOWS AND GRASSLANDS IN THE WHITE MOUNTAINS. ALSO MANAGED AS A SPORT FISH UNDER SPECIAL REGULATIONS.

NAME: LITTLE COLORADO SPINEDACE *LEPIDOMEDA VITTATA*

STATUS: THREATENED CRITICAL HAB: Yes RECOVERY PLAN: Yes CFR: 52 FR 35554

DESCRIPTION: SMALL (<4 INCHES LONG) SILVERY MINNOW WHICH IS DARKER ON THE BACK THAN THE BELLY

ELEVATION RANGE: 4000-8000 FT.

COUNTIES: COCONINO, APACHE, NAVAJO

HABITAT: MODERATE TO SMALL STREAMS IN POOLS AND RIFFLES WITH WATER FLOWING OVER GRAVEL AND SILT

CRITICAL HABITAT INCLUDES EIGHTEEN MILES OF EAST CLEAR CREEK, EIGHT MILES OF CHEVELON CREEK, AND FIVE MILES OF NUTRIOSO CREEK

NAME: LOACH MINNOW *TIAROGA COBITIS*

STATUS: THREATENED CRITICAL HAB: Yes RECOVERY PLAN: Yes CFR: 51 FR 39468, 10-28-1986; 59 FR 10035, 03-08-1994;

DESCRIPTION: SMALL (<3 INCHES LONG) SLENDER, ELONGATED FISH, OLIVE COLORED WITH DIRTY WHITE SPOTS AT THE BASE OF THE DORSAL AND CAUDAL FINS. BREEDING MALES VIVID RED ON MOUTH AND BASE OF FINS

ELEVATION RANGE: <8000 FT.

COUNTIES: PINAL, GRAHAM, GREENLEE, GILA, APACHE, NAVAJO, *YAVAPAI, *COCHISE, *PIMA

HABITAT: BENTHIC SPECIES OF SMALL TO LARGE PERENNIAL STREAMS WITH SWIFT SHALLOW WATER OVER COBBLE & GRAVEL. RECURRENT FLOODING AND NATURAL HYDROGRAPH IMPORTANT.

PRESENTLY FOUND IN ARAVAIPA CREEK, BLUE RIVER, CAMPBELL BLUE CREEK, SAN FRANCISCO RIVER, DRY BLUE CREEK, TULAROSA RIVER, EAST-WEST AND MIDDLE FORKS OF THE GILA RIVER, EAGLE CREEK, EAST FORK, BLACK RIVER, AND THE MAINSTEM UPPER GILA RIVER. CRITICAL HABITAT WAS REMOVED IN MARCH 1998; BUT RE-PROPOSED DEC 1998 AND FINALIZED APRIL 2000. SPECIES ALSO FOUND IN CATRON, GRANT, AND HIDALGO COUNTIES IN NEW MEXICO. *COUNTIES WITH CRITICAL HABITAT PRESENTLY CONTAIN NO KNOWN EXISTING POPULATIONS OF LOACH MINNOW.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: NAVAJO

06/22/2000

NAME: SPIKEDACE *MEDA FULGIDA*

STATUS: THREATENED CRITICAL HAB: Yes RECOVERY PLAN: Yes CFR: 51 FR 23769,07-01-1986; 59 FR 10909, 03-08-1994

DESCRIPTION: SMALL (<3 INCHES) SLIM WITH SILVERY SIDES & "SPINE" ON DORSAL FIN. BREEDING MALES BRASSY GOLDEN COLOR.

ELEVATION RANGE: <6000 FT.

COUNTIES: GRAHAM, PINAL, GREENLEE, YAVAPAI, APACHE*, COCHISE*, GILA*, NAVAJO*, PIMA*

HABITAT: MODERATE TO LARGE PERENNIAL STREAMS WITH GRAVEL COBBLE SUBSTRATES AND MODERATE TO SWIFT VELOCITIES OVER SAND AND GRAVEL SUBSTRATES. RECURRENT FLOODING AND NATURAL

PRESENTLY FOUND IN ARAVAIPA CREEK, EAGLE CREEK, VERDE RIVER, EAST-WEST- MAIN AND MIDDLE FORKS OF THE GILA RIVER IN NEW MEXICO, AND GILA RIVER FROM SAN PEDRO RIVER TO ASHURST HAYDEN DAM. CRITICAL HABITAT WAS REMOVED IN MARCH 1998, BUT RE-PROPOSED DEC 1999 AND FINALIZED IN APRIL 2000. SPECIES ALSO FOUND IN CATRON, GRANT, AND HIDALGO COUNTIES IN NEW MEXICO. *COUNTIES WITH CRITICAL HABITAT PRESENTLY CONTAIN NO KNOWN EXISTING POPULATIONS OF SPIKEDACE.

NAME: BALD EAGLE *HALIAEETUS LEUCOCEPHALUS*

STATUS: THREATENED CRITICAL HAB: No RECOVERY PLAN: Yes CFR: 60 FR 35999, 07-12-95

DESCRIPTION: LARGE, ADULTS HAVE WHITE HEAD AND TAIL, HEIGHT 28 - 35"; WINGSPAN 66 - 90". 1-4 YRS DARK WITH VARYING DEGREES OF MOTTLED BROWN PLUMAGE. FEET RAW OF FEATHERS.

ELEVATION RANGE: VARIES FT.

COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA, GILA, GRAHAM, COCHISE

HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS. AN ESTIMATED 250 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967; 43 FR 6233, 02-14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT. THIS SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF HABITAT CONTINUES TO BE A PROBLEM. SPECIES HAS BEEN PROPOSED FOR DELISTING (64 FR 36454) BUT STILL RECEIVES FULL PROTECTION UNDER ESA.

NAME: CALIFORNIA CONDOR *GYMNOPS CALIFORNIANUS*

STATUS: EXPERIMENTAL/NONESSENTIAL CRITICAL HAB: No RECOVERY PLAN: Yes CFR: 32 FR 4001; 03-11-67

DESCRIPTION: VERY LARGE VULTURE (47 IN., WINGSPAN TO 9 1/2 FT, WEIGHT TO 22 LBS); ADULT PLUMAGE BLACKISH, IMMATURE MORE BROWNISH; ADULT WING LININGS WHITE, IMMATURE MOTTLED; HEAD & UPPER PARTS OF NECK BARE; YELLOW-ORANGE IN ADULTS, GRAYISH IN IMMATURE.

ELEVATION RANGE: VARIES FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE

HABITAT: HIGH DESERT CANYONLANDS AND PLATEAUS

LAST WILD CONDOR REPORTED IN ARIZONA IN 1924. RECOVERY PROGRAM HAS REINTRODUCED CONDORS TO NORTHERN ARIZONA, WITH THE FIRST RELEASE (6 BIRDS) IN DECEMBER 1996. RELEASE SITE LOCATED AT THE VERMILLION CLIFFS (COCONINO CO.), WITH AN EXPERIMENTAL/NONESSENTIAL AREA DESIGNATED FOR MOST OF NORTHERN ARIZONA AND SOUTHERN UTAH.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY: NAVAJO

06/22/2000

NAME: MEXICAN SPOTTED OWL *STRIX OCCIDENTALIS LUCIDA*

STATUS: THREATENED CRITICAL HAB: No RECOVERY PLAN: Yes CFR: 56 FR 14678, 04-11-91

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND HEAVILY SPOTTED WITH WHITE OR BEIGE.

ELEVATION RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA, PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDERSA PINE/GAMBEL OAK TYPE. IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERED.

NAME: SOUTHWESTERN WILLOW FLYCATCHER *EMPIDONAX TRAILLI EXTIMUS*

STATUS: ENDANGERED CRITICAL HAB: Yes RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 6") GRAYISH-GREEN BACK AND WINGS, WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ASSENT.

ELEVATION RANGE: <8500 FT.

COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM, YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW & TAMARISK VEGETATION COMMUNITIES ALONG RIVERS & STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT ON PORTIONS OF THE 100-YEAR FLOODPLAIN ON SAN PEDRO AND VERDE RIVERS, WET BEAVER AND WEST CLEAR CREEKS, INCLUDING TAVASCI MARSH AND ISTER FLAT, THE COLORADO RIVER, THE LITTLE COLORADO RIVER, AND THE WEST, EAST, AND SOUTH FORKS OF THE LITTLE COLORADO RIVER, REFERENCE 60 CFR 62 FR 39129, 7/22/97.

United States Department of the Interior
NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
Intermountain Support Office - Denver
12795 W. Alameda Parkway
Post Office Box 25287
Denver, Colorado 80225-0287

IN REPLY REFER TO:

July 5, 2000

Michele James, Biologist
United States Department of Interior
Fish and Wildlife Service
5075 North Hwy. 89
Flagstaff, AZ 86004

Re: Section 7 Consultation for Navajo National Monument's General Management Plan/EIS

Michele,

I would like to request the latest list of threatened, endangered, proposed, and candidate species and designated critical habitats that may be present at Navajo National Monument, Tonalea, AZ. A similar request will be sent to the Navajo Fish and Wildlife Service.

The National Park Service is undertaking the development of a General Management Plan/EIS for Navajo National Monument which will eventually include several alternatives including a no-action and a preferred alternative; however, they are only in draft form at this time (see enclosed newsletter).

The area managed by the park service includes Betatakin and Keet Seel units which are each 160 acre tracts along Laguna Creek. Betatakin also has an additional 240 acres used under an agreement with Navajo Nation. Inscription House is a 40-acre tract near Navajo Creek. All units are within and surrounded by Navajo Indian Reservation lands and part of Navajo county. Presently, we are aware that the Betatakin unit involves Mexican Spotted Owl habitat and a plant species of concern, *Platanthera zothecina* or Alcove Bog Orchid.

The planning team would like your input early on, so that the draft management alternatives appear to be realistic with regards to any species of concern. Even though this is only a plan, not an on-the-ground project per se, the park service will need to choose a preferred alternative that best represents our mission to preserve and protect all resources. Any feedback you may have on the draft alternatives thus far and advice on FWS consultation needs for a planning document such as this one would be greatly appreciated. Please contact me at 303/969-2518 or e-mail at laura_hudson@nps.gov.

Sincerely,

Laura E. Hudson, Natural Resource Specialist

Cc: James Charles, Superintendent, Navajo NM
Suzy Stutzman, GMP Team Leader, DSC

THE NAVAJO NATION

P. O. BOX 9000 • WINDOW ROCK, ARIZONA 86515 • (520) 871-6000

KELSEY A. BEGAYE
PRESIDENT

TAYLOR McKENZIE, M.D.
VICE PRESIDENT

August 21, 2000

Laura E. Hudson, Natural Resource Specialist
United States Department of the Interior
National Park Service
Intermountain Region
Intermountain Support Office - Denver
12795 W. Alameda Parkway
Post Office Box 25287
Denver, Colorado 80225-0287

SUBJECT: **Consultation on Navajo National Monument's General Management Plan/EIS**

Ms. Hudson;

The following information on species of concern[1] is provided in response to your 05 July 2000 request concerning the subject project, which consists of The National Park Service undertaking the development of a General Management Plan/EIS for Navajo National Monument. The area managed by the park service includes Betatakin and Keet Seel units which are each 160 acre tracts along Laguna Creek.

At this time, the Navajo Fish and Wildlife Department (NFWD) has no record of species of concern occurring on the project sites.

Each 7.5-minute quadrangle containing project boundaries is addressed separately below. These species lists are quadrangle-specific rather than project-specific. Potential for species has been determined primarily on quadrangle-wide coarse habitat characteristics and species range information. Your project biologist should determine habitat suitability at the project sites.

A total of 15 species are identified in the quadrangle-specific lists. They are:

1. Alectoris chukar (Chukar).
2. Aquila chrysaetos (Golden Eagle); NESL group 3; MBTA; BPA.
3. Buteo regalis (Ferruginous Hawk); NESL group 3; MBTA.
4. Carex specuicola (Navajo sedge); NESL group 3; ESA threatened.
5. Cinclus mexicanus (American Dipper); NESL group 3; MBTA.

[1] "Species of concern" include protected, candidate, and other rare or otherwise sensitive species, including certain native species and species of economic or cultural significance. For each species, the following tribal and federal statutes are indicated: Navajo Endangered Species List (NESL); federal Endangered Species Act (ESA); Migratory Bird Treaty Act (MBTA); and Eagle Protection Act (EPA). No legal protection is afforded species with only ESA candidate or NESL group 4 status; please be aware of these species during surveys and inform the NFWD of observations. Documentation that these species are more numerous or widespread than currently known, and addressing these species in project planning and management is important for conservation and may contribute to ensuring they will not be uplisted in the future. Species without ESA or NESL legal protection (e.g., NESL group 4 species) are only included in responses on an irregular basis and may not be included in this response. Please refer to the NESL for a list of group 4 species; contact me if you need a copy.

6. Empidonax traillii extimus (Southwestern Willow Flycatcher); NESL group 2; ESA endangered; MBTA.
7. Falco peregrinus (Peregrine Falcon); NESL group 3; MBTA.
8. Glaucidium gnoma (Northern Pygmy-owl); NESL group 4; MBTA.
9. Mustela nigripes (black-footed ferret); NESL group 2; ESA endangered. Potential for the black-footed ferret should be evaluated if prairie-dog towns of sufficient size (per NFWD guidelines) occur in the project area.
10. Nycticorax nycticorax (Black-crowned Night-heron); MBTA.
11. Parus atricapillus (Black-capped Chickadee); MBTA.
12. Platanthera zothecina (alcove bog-orchid); NESL group 3. Formerly known as Habenaria zothecina.
13. Puccinellia parishii (Parish's alkali grass); NESL group 2. Potential for Puccinellia parishii should be evaluated if wetland conditions exists that contain white alkaline crusts.
14. Rana pipiens (northern leopard frog); NESL group 3. 1993 Record.
15. Strix occidentalis lucida (Mexican Spotted Owl); NESL group 3; ESA threatened; MBTA.

BETATAKIN RUIN, AZ QUADRANGLE
Project Site: Betatakin Ruin, Navajo National Monument.

At this time, the Navajo Fish and Wildlife Department (NFWD) has no record of species of concern occurring on the project site.

Species of concern known to occur within one mile of the project site include:

1. Nycticorax nycticorax
2. Rana pipiens - 1993 Record.
3. Strix occidentalis lucida

Species of concern known to occur within three miles of the project site include:

4. Carex specuicola
5. Falco peregrinus

Additional species of concern with potential to occur on the 7.5-minute quadrangle include:

6. Aquila chrysaetos
7. Buteo regalis
8. Cinclus mexicanus
9. Empidonax traillii extimus
10. Glaucidium gnoma
11. Mustela nigripes
12. Parus atricapillus
13. Platanthera zothecina
14. Puccinellia parishii

KEET SEEL RUIN, AZ QUADRANGLE
Project Site: Keet Seel Ruin, Navajo National Monument.

At this time, the Navajo Fish and Wildlife Department (NFWD) has no record of species of concern occurring on the project site.

Species of concern known to occur within one mile of the project site include:

1. Carex specuicola
2. Strix occidentalis lucida

Species of concern known to occur within three miles of the project site include:

3. Falco peregrinus
4. Plagenhorn ostheritia

Additional species of concern with potential to occur on the 7.5-minute quadrangle include:

5. Alectoris chukar
6. Aquila chrysaetos
7. Empidonax traillii extimus
8. Mazzula nigriceps
9. Rana pipiens

Biological surveys should be conducted during the appropriate season. Surveyors on the Navajo Nation must be **permitted** by the Director, NFWD. Contact Jeff Cole at (520) 871-7068 for permitting procedures. Questions pertaining to surveys should be directed to the NFWD Zoologist (David Mikesic) for animals at 871-7638, and Botanist (Daniela Roth) for plants at 871-7639.

Potential impacts to **wetlands** should also be evaluated. The U.S. Fish & Wildlife Service's National Wetlands Inventory (NWI) maps should be examined to determine whether areas classified as wetlands are located close enough to the project site(s) to be impacted. In cases where the maps are inconclusive (e.g., due to their small scale), field surveys must be completed. For field surveys, wetlands identification and delineation methodology contained in the "Corps of Engineers Wetlands Delineation Manual" (Technical Report Y-87-1) should be used. When wetlands are present, potential impacts must be addressed in an environmental assessment and the Army Corps of Engineers, Phoenix office, must be contacted. NWI maps are available for examination at the NFWD's Natural Heritage Program (NHP) office, or may be purchased through the U.S. Geological Survey (order forms are available through the NHP). The NHP has complete coverage of the Navajo Nation, excluding Utah, at 1:100,000 scale; and coverage at 1:24,000 scale in the southwestern portion of the Navajo Nation.

The information in this report was identified by the NFWD's biologists and computerized database, and is based on current data. It should not be regarded as the final statement on the occurrence of any species, nor should it substitute for on-site surveys. Also, because the NFWD's information is continually updated, any given information response is only wholly appropriate for its respective request.

If you have any questions I may be reached at (520) 871-7603.

Brent Nelson, Data Manager
Natural Heritage Program
Navajo Fish and Wildlife Department
xc: file/chrono

United States Department of the Interior
NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
Intermountain Support Office - Denver
12795 W. Alameda Parkway
Post Office Box 25287
Denver, Colorado 80225-0287

IN REPLY REFER TO:

July 3, 2000

John Nystedt, Biologist
Navajo Fish and Wildlife Department
Box 1480
Window Rock, AZ 86515

Re: Consultation on Navajo National Monument's General Management Plan/EIS

John,

I would like to request the latest list of threatened, endangered, proposed, and candidate species and designated critical habitats that may be present at Navajo National Monument, Tonalea, AZ. A similar request will be sent to the U.S. Fish and Wildlife Service in Flagstaff, AZ.

The National Park Service is undertaking the development of a General Management Plan/EIS for Navajo National Monument which will eventually include several alternatives including a no-action and a preferred alternative; however, they are only in draft form at this time (see enclosed newsletter).

The area managed by the park service includes Betatakin and Keet Seel units which are each 160 acre tracts along Laguna Creek. Betatakin also has an additional 240 acres used under an agreement with Navajo Nation. Inscription House is a 40-acre tract near Navajo Creek. All units are within and surrounded by Navajo Indian Reservation lands and part of Navajo county. Presently, we are aware that the Betatakin unit involves Mexican Spotted Owl habitat and a plant species of concern, *Platanthera zothecina* or Alcove Bog Orchid.

The planning team would like your input early on, so that the draft management alternatives appear to be realistic with regards to any species of concern. Even though this is only a plan, not an on-the-ground project per se, the park service will need to choose a preferred alternative that best represents our mission to preserve and protect all resources. Any feedback you may have on the draft alternatives thus far and advice on Navajo Nation consultation needs for a planning document such as this one would be greatly appreciated. Please contact me at 303/969-2518 or e-mail at laura_hudson@nps.gov.

Sincerely,

Laura E. Hudson, Natural Resource Specialist

Cc: James Charles, Superintendent, Navajo NM
Suzy Stutzman, GMP Team Leader, DSC

THE
NAVAJO
NATION
FISH & WILDLIFE DEPARTMENT • P. O. BOX 1480 • WINDOW ROCK • AZ • 86515

KELSEY A. BEGAYE
PRESIDENT

TAYLOR McKENZIE, M.D.
VICE PRESIDENT

23 March 2001

To: Interested Parties

Subject: **NAVAJO ENDANGERED SPECIES LIST UPDATE**

On 15 March 2001 the Resources Committee of the Navajo Nation Council, by Resolution RCMA-31-01, approved the "Navajo Endangered Species List" (NESL). On 10 January 2000 the Navajo Nation Department of Fish and Wildlife (NNDFWL) sent proposed changes to knowledgeable individuals and organizations for comment. Pursuant to Title 17 §507A of the Navajo Nation Code and based on comments received, the expertise of NNDFWL biologists, and the Navajo Natural Heritage Program database, the NESL was revised and approved effective 15 March 2001. Enclosed is a copy of the updated NESL. Please route a copy to other personnel in your office, as needed.

Group 1 contains those species that are extirpated on the Navajo Nation. Groups 2 and 3 contain endangered species and are protected by the Code. Group 4 contains species for which information is being gathered to determine their statuses; they are not protected by the Code, but the NNDFWL recommends their consideration in project planning.

Pursuant to 17 NNC §507A it is unlawful for any person to "take, possess, transport, export, process, sell or offer for sale or ship any species or subspecies" on the NESL. The penalty for unlawfully taking an endangered species is imprisonment and/or a fine.

If you have any questions concerning species' status contact David Mikesic, Zoologist, for animals at (520) 871-7070 or Daniela Roth, Botanist, for plants at (520) 523-7242. Copies of comments on proposed changes and justification for final revisions are available on request.

Gloria M. Tom, Director
Navajo Nation Department of Fish and Wildlife
P.O. Box 1480
Window Rock, Navajo Nation, Arizona 86515

ATTACHMENTS: MARCH 2001 NESL
RESOLUTION RCMA-31-01

xc: Executive Director, Division of Natural Resources
Chairman, Resources Committee
file/chrono

NAVAJO NATION
DIVISION OF NATURAL RESOURCES
DEPARTMENT OF FISH AND WILDLIFE

NAVAJO ENDANGERED SPECIES LIST

Resources Committee Resolution
No. RCMA-31-01

March 2001

GROUP 1: Those species or subspecies that no longer occur on the Navajo Nation.

GROUP 2 (G2) & GROUP 3 (G3): **"Endangered"** – Any species or subspecies whose prospects of survival or recruitment within the Navajo Nation are in jeopardy or are likely within the foreseeable future to become so.

- **G2:** A species or subspecies whose prospects of survival or recruitment are in jeopardy.
- **G3:** A species or subspecies whose prospects of survival or recruitment are likely to be in jeopardy in the foreseeable future.

GROUP 4: Any species or subspecies for which the Navajo Nation Department of Fish and Wildlife (NNDFWL) does not currently have sufficient information to support their being listed in G2 or G3 but has reason to consider them. The NNDFWL will actively seek information on these species to determine if they warrant inclusion in a different group or removal from the list.

The NNDFWL shall determine the appropriate group for listing a species or subspecies due to any of the following factors:

1. The present or threatened destruction, modification, or curtailment of its habitat;
2. Over-utilization for commercial, sporting or scientific purposes;
3. The effect of disease or predation;
4. Other natural or man-made factors affecting its prospects of survival or recruitment within the Navajo Nation; or
5. Any combination of the foregoing factors.

NAVAJO ENDANGERED SPECIES LIST – March 2001

Scientific name (Common name)

GROUP 1:

MAMMALS

Canis lupus (Gray Wolf)
Lontra canadensis (Northern River Otter)
Ursus arctos (Grizzly or Brown Bear)

BIRDS

Centrocercus minimus (Gunnison Sage-Grouse)

FISHES

Gila elegans (Bonytail)

GROUP 2:

MAMMALS

Mustela nigripes (Black-footed Ferret)

BIRDS

Empidonax traillii extimus (Southwestern Willow Flycatcher)

AMPHIBIANS

Rana pipiens (Northern Leopard Frog)

FISHES

Gila cypha (Humpback Chub)
Gila robusta (Roundtail Chub)
Ptychocheilus lucius (Colorado Pikeminnow)
Xyrauchen texanus (Razorback Sucker)

PLANTS

Astragalus humillimus (Mancos Milk-vetch)
Erigeron rhizomatus (Rhizome Fleabane)
Pediocactus bradyi (Brady Pincushion Cactus)

GROUP 3:

MAMMALS

Antilocapra americana (Pronghorn)*
Ovis canadensis (Bighorn Sheep)

BIRDS

Aquila chrysaetos (Golden Eagle)
Buteo regalis (Ferruginous Hawk)
Cinclus mexicanus (American Dipper)
Coccyzus americanus (Yellow-billed Cuckoo)
Strix occidentalis lucida (Mexican Spotted Owl)

INVERTEBRATES

Speyeria nokomis (Western Seep Fritillary)

PLANTS

Allium gooddingii (Gooding's Onion)
Astragalus cremnophylax var. *hevronii* (Marble Canyon Milk-vetch)
Astragalus cutleri (Cutler's Milk-vetch)
Carex specuicola (Navajo Sedge)
Erigeron acomanus (Acoma Fleabane)
Pediocactus peeblesianus var. *fickeiseniae* (Fickeisen Plains Cactus)
Penstemon navajoa (Navajo Penstemon)
Platanthera zothecina (Alcove Bog-orchid)
Sclerocactus mesae-verdae (Mesa Verde Cactus)

*GD designation excludes NNDFWL Management Unit 16 ("New Lands"), the boundaries of which are: From Sanders, AZ east along Unit 4 boundary to the Zuni boundary; south along the boundary past AZ Hwy 61 to the Navajo Nation/state boundary; west along the boundary past US Hwy 666 to the Navajo Nation/state boundary; north along Rd 3007 to Navajo, AZ; west on the north and south of Interstate 40) to the state/Petrified Forest National Park boundary; north along the boundary to the Unit 8 boundary; east along the boundary to US Hwy 191; south to Chambers and east to Sanders. For a Unit 16 map, contact NNDFWL, P.O. Box 1480, Window Rock, AZ, 86515, (520) 871-6451.

NAVAJO ENDANGERED SPECIES LIST – March 2001

Scientific name (Common name)

GROUP 4:

MAMMALS

Dipodomys microps (Chisel-toothed Kangaroo Rat)
Microtus mexicanus (= *mogollonensis*) (Navajo Mountain Vole)
Plecotus townsendii (Townsend's Big-eared Bat)
Vulpes macrotis (Kit Fox)

BIRDS

Accipiter gentilis (Northern Goshawk)
Aechmophorus clarkii (Clark's Grebe)
Aegolius acadicus (Northern Saw-whet Owl)
Ceryle alcyon (Belted Kingfisher)
Charadrius montanus (Mountain Plover)
Columba fasciata (Band-tailed Pigeon)
Dendragapus obscurus (Blue Grouse)
Dendroica petechia (Yellow Warbler)
Empidonax hammondii (Hammond's Flycatcher)
Falco peregrinus (Peregrine Falcon)
Glaucidium gnoma (Northern Pygmy-Owl)
Otus flammeolus (Flammulated Owl)
Picoides tridactylus (Three-toed Woodpecker)
Porzana carolina (Sora)
Tachycineta bicolor (Tree Swallow)

REPTILES

Lampropeltis triangulum (Milk Snake)
Sauromalus ater (Chuckwalla)

FISHES

Catostomus discobolus (Bluehead Sucker)
Cottus bairdi (Mottled Sculpin)

INVERTEBRATES

Oxyloma kanabense (Kanab Ambersnail)

PLANTS

Amsonia peeblesii (Peebles Blue-star)
Asclepias sanjuanensis (San Juan Milkweed)
Asclepias welshii (Welsh's Milkweed)
Astragalus cronquistii (Cronquist Milk-vetch)
Astragalus naturitensis (Naturita Milk-vetch)
Astragalus sophoroides (Painted Desert Milk-vetch)
Astragalus sterilis (Sleeping Ute Milk-vetch)
Camissonia atwoodii (Atwood's Camissonia)
Clematis hirsutissima var. *arizonica* (Arizona Leather Flower)
Cryptantha atwoodii (Atwood's Cryptantha)
Cymopterus acaulis var. *higginsii* (Higgins Biscuitroot)
Cystoperis utahensis (Utah Bladder-fern)
Erigeron sivinskii (Sivinski's Fleabane)
Errazurizia rotundata (Round Dutchman)
Lesquerella navajoensis (Navajo Bladderpod)
Perityle specuicola (Alcove Rock Daisy)
Phacelia indecora (Bluff Phacelia)
Phacelia welshii (Welsh Phacelia)
Puccinellia parishii (Parish's Alkali Grass)

RCMA-31-01

RESOLUTION
OF THE RESOURCES COMMITTEE
OF THE NAVAJO NATION COUNCIL

Approval of Deletions from, and Additions to, the Navajo Endangered Species List

WHEREAS:

1. Pursuant to 2 N.N.C. § 691 et seq., the Resources Committee was established as a standing committee of the Navajo Nation Council; and

2. Pursuant to 17 N.N.C. § 507A, the Resources Committee is required to develop a list of endangered species within the Navajo Nation, based on investigations concerning wildlife and other scientific and commercial data, and consultation with wildlife agencies in surrounding states, appropriate federal agencies and other interested persons and organizations; and

3. The Resources Committee approved the endangered species list by resolution RCF-014-91; and

4. Pursuant to 17 N.N.C. § 507B, the Director of the Department of Fish and Wildlife (Department) is required to review the list and present recommendations for appropriate additions or deletions to the Resources Committee; and

5. Pursuant to 17 N.N.C. § 500H, an endangered species is "any species of fish or wildlife whose prospects of survival or recruitment within the Navajo Nation are in jeopardy or are likely within the foreseeable future to become so" due to any of the following factors: a) the present or threatened modification of its habitat; b) over utilization; c) disease or predation; and d) other natural or manmade factors affecting its prospects of survival or recruitment within the Navajo Nation; and

6. Department review of the list is based on this codified definition of an endangered species; species are recommended for addition to the list when they meet this definition, and are recommended for deletion from the list

RCMA-31-01

when none of the four factors listed above apply and the species' prospects of survival or recruitment within the Navajo Nation are no longer in jeopardy or likely to be in jeopardy; and

7. Since approval of the 1991 endangered species list, new information about the status of various species has been gathered and indicates changes to the list are warranted; and

8. On the basis of the Department's wildlife investigations and other scientific data, and after consulting with 55 Tribal, Federal and state agencies and other interested parties, the Department recommends certain additions to and deletions from the list, attached hereto as Exhibit "A", hereafter referred to as the "Navajo Endangered Species List"; and

9. Justification for adding species to, and deleting species from, the Navajo Endangered Species List is set forth in a report attached hereto as Exhibit "B".

NOW THEREFORE BE IT RESOLVED THAT:

The Resources Committee of the Navajo Nation Council hereby approves the revised Navajo Endangered Species List, attached hereto as Exhibit "A", which shall become effective upon adoption of this resolution.

CERTIFICATION

I hereby certify that the foregoing resolution was duly considered by the Resources Committee of the Navajo Nation Council at a duly called meeting at Window Rock, Navajo Nation (Arizona), at which a quorum was present and that same was passed by a vote of 4 in favor, 0 opposed and 0 abstained, this 15th day of March, 2001.

Gedrge Arthur, Chairperson
Resources Committee

Motion: Jack Colorado
Second: Jones Begay

APPENDIX E: PROPOSED BOUNDARY ADJUSTMENT

Both alternatives B and C propose that the National Park Service seek to acquire through purchase or exchange the headquarters unit. The land on which the headquarters, visitor center, campground, picnic area, overlooks, trails, employee housing, and maintenance are located is currently Navajo Nation Land used by the National Park Service under a Memorandum of Understanding. The proposal in alternatives B and C is to seek transfer of that land to the NPS, through exchange or purchase. While the existing arrangement works well, the transfer would ensure long-term maintenance and improvement of facilities and clarify issues of jurisdiction and liability.

Specific criteria are used by the National Park Service to evaluate boundary adjustments, which apply to the proposal to add the headquarters to Navajo National Monument. The following list identifies the criteria and how they apply to this proposal:

- To include significant resources or opportunities for public enjoyment related to the purposes of the park.

  Proposal: The proposed parcel contains the visitor center, campground, picnic area, popular trails, and views into the canyons and of Betatakin, a primary resource. For most visitors, this is the only area of the park they experience and gain understanding of these sensitive, remote cliff dwellings. Inclusion of this parcel ensures long-term maintenance and improvement of these facilities for visitor enjoyment and appreciation. It would be more feasible to secure funding for facility improvements if the land were in NPS ownership. It would also make fee collection by the NPS possible, which would allow the monument to collect and re-invest fees into improvements for visitor enjoyment.

- To address operational and management issues such as access and boundary identification by topographic or other natural features or roads.

  Proposal: Addition of this parcel would not clarify the boundary along a major landscape feature such as a ridge, canyon rim, or road. However, it would meet another aspect of this criteria, which is to include the National Park Service housing and maintenance areas within the boundaries of the monument and ensure their long-term maintenance and improvement. It would be more feasible to secure funding for facility improvements if the land was in NPS ownership. Acquisition of the parcel would also clarify jurisdiction and liability issues unanswered in the present agreement.

- To protect park resources critical to fulfilling the park's purposes.

  Proposal: There are no immediate threats to park resources under the current agreement with the Navajo Nation for the use of this land as headquarters.

Two of the three criteria above have been met to recommend a boundary adjustment, exceeding the requirement to meet at least one. Of the next two criteria, both must be met to further recommend this adjustment:

- The added lands will be feasible to administer considering size, configuration, ownership, costs, and other factors.

Proposal: This 240 acre parcel contains most of the monument's infrastructure, already maintained by the staff. Costs of administering the parcel would not increase operating costs.

- Other alternatives for management and resource protection are not adequate

Proposal: Alternatives for management and resource protection have been identified in the plan, and the full evaluation of impacts is in the EIS. They are summarized below:

Alternative A- Review and revise Memorandum of Understanding with Navajo Nation regarding land at headquarters to reflect current interests and concerns.

- Lack of clarity of NPS jurisdiction at headquarters unit.
- Difficulty in funding facility improvements

Alternatives B/C – Seek transfer of headquarters unit to NPS from Navajo Nation by purchase or exchange with agreement and endorsement by Navajo Nation.

+ Clarify and improve jurisdiction at headquarters unit.

+ Increase opportunities to fund facility improvements.

- Navajo Nation may perceive any loss of tribal lands as unacceptable.

While transferring this 240 acre unit to the NPS is recommended, it would only be sought if it was endorsed by the Navajo Nation. If agreed to, legislation would be required for authorizing the addition. If it is not transferred, Alternatives B or C could still be implemented.

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ABBREVIATIONS

CFR—Code of Federal Regulations

EIS—Environmental Impact Statement

GMP—General Management Plan

NAGPRA—Native American Graves Protection and Repatriation Act

NEPA—National Environmental Policy Act

NPS—National Park Service

PL—Public Law

Sec. 106—Section 106 of the National Historic Preservation Act

THPO—Tribal Historic Preservation Office

USC—United States Code

DEFINITION OF KEY TERMS

Accessibility—the provision of NPS programs, facilities, and services in ways that include individuals with disabilities, or makes available to those individuals the same benefits available to persons without disabilities.

Affiliated American Indian tribes—the lineal descendents or culturally affiliated Native American groups, for the purposes of fulfilling the intent of the Native American Graves Protection and Repatriation Act.

Anasazi—Navajo term meaning "ana" (enemy) and "sazi" (older); old ones, elders. Also, means ancient people or ancient enemies.

Archeological resource—any material remains or physical evidence of past human life or activities. An archeological resource is capable of revealing scientific or humanistic information through archeological research. Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony belong to culturally affiliated Native American groups through the provisions of the Native American Graves Protection and Repatriation Act.

Associated American Indian tribes—tribes with cultural associations to the area of the monument that include a distinct set of beliefs and a relationship the sites, geography, and landscapes of the monument area. This association precedes the establishment of the monument by numerous generations.

Backcountry—refers to undeveloped portions of the monument (without roads, buildings, parking lots, etc.) with small numbers of visitors.

Cultural landscape—a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with an event, activity, or person, or exhibiting other cultural or esthetic values.

Cultural resource—an aspect of a cultural system that is valued by or significantly representative of a culture, or that contains significant information about a culture. A cultural resource may be a tangible entity such as structures, museum

objects, archeological resources, or ethnographic resources, or an intangible activity such as cultural practices.

Ecosystem—system formed by the interaction of a community of organisms with their physical environment, considered as a unit.

Environmental impact statement—a detailed NEPA analysis document that is prepared when a proposed action or alternatives have the potential for significant impact on the human environment.

Ethnographic landscape—an area containing a variety of natural and cultural resources that traditionally associated people define as heritage resources. The area may include plant and animal communities, structures, and geographic features, each with their own special local names.

Ethnographic resources—objects and places, including sites, structures, landscapes, and natural and cultural resources, with traditional cultural meaning and value to associated peoples, as determined by research and consultation.

Exotic species—species that occupy park lands directly or indirectly as the result of deliberate or accidental human activities (also referred to as nonnative, alien, or invasive species).

Front country—refers to the area of the monument developed with roads, buildings, parking lots, overlooks, campgrounds, etc., to serve many visitors and administer the monument.

General management plan (GMP)—a plan that clearly defines direction for resource preservation and visitor use in a park and serves as the basic foundation for decision making. GMPs are developed with broad pubic involvement.

Hanging garden – Aclove hanging gardens and seeps are very specialized and variable sub-component of the canyon system. They often harbor endemic, rare, and endangered plant species.

Hisatsinom—Hopi term meaning ancestral pueblo people.

Impact—the likely effects of an action or proposed action upon specific natural, cultural, or socioeconomic resources. Impacts may be direct, indirect, cumulative, beneficial, or adverse.

Impairment—an impact so severe that, in the professional judgment of a responsible NPS manager, it would harm the integrity of park resources or values and violate the 1916 NPS Organic Act.

Implementation plan—a plan that focuses on how to implement an activity or project needed to achieve a long-term goal. An implementation plan may direct a specific project or an ongoing activity.

Lightscapes (natural ambient)—the state of natural resources and values as they exist in the absence of human-caused light.

Management prescriptions—an NPS management tool that identifies the desired future condition for various land areas within NPS units. Prescriptions include desired natural and cultural resource conditions, desired visitor understanding, and the appropriate level of management and development of facilities.

Mitigation—modification of a proposal to lessen the intensity of its impact on a particular resource.

National park system—the sum total of the land and water now or hereafter administered by the Secretary of the Interior through the National Park Service for park,

monument, historic, parkway, recreational, or other purposes.

National Register of Historic Places—the comprehensive list of districts, sites, buildings, structures, and objects of national, regional, state, and local significance, designated by the Secretary of the Interior under the authority of the Historic Sites Act of 1935 and entered in the National Register of Historic Places.

Native species—all species that have occurred now or occur as a result of natural processes on land designated as units of the NPS.

Natural change—recognized as an integral part of the functioning of natural systems.

Natural condition—describes the condition of resources that would occur in the absence of human dominance over the landscape.

Natural resources—physical resources (such as water, air, soils, geologic features), physical processes (such as weather, erosion, wildland fire), biological resources (such as native plants, animals, communities), biological processes (such as photosynthesis, succession, evolution), and ecosystems.

Preservation—the act or process of applying measures to sustain the existing form, integrity, and material of a historic structure, landscape, or object. Work may include preliminary measures to protect and stabilize the property, but generally focuses on the ongoing preservation maintenance and repair of historic materials and features rather than extensive replacement and new work.

Pueblo—Spanish term meaning village or town. This term was applied to Native American villages encountered by Spanish explorers and settlers of the Southwest, hence, Zuni Pueblo.

Remoteness—a lack of modern intrusions such as noise, vehicles, buildings, parking lots, and bright lights obstructing the night sky.

Soundscape (natural)—the aggregate of all the natural, non-human-caused sounds that occur in the monument, together with the physical capacity for transmitting natural sounds.

Stabilization—interventive treatment action taken to increase the stability or durability of an object when preventative conservation measures fail to decrease its rate of deterioration to an acceptable level or when it has deteriorated so far that its existence is jeopardized.

Stewardship—the cultural and natural resource protection ethic of employing the most effective concepts, techniques, equipment, and technology to prevent, avoid, or mitigate impacts that would compromise the integrity of park resources.

Traditional—pertains to the recognizable, but not necessarily identical, cultural patterns transmitted by a group across at least two generations. Synonyms include "ancestral" and "customary."

Tribal Historic Preservation Officer (THPO)—the tribal official appointed by the tribe's chief governing authority or designated by a tribal ordinance or preservation program that has assumed the responsibilities of the State Historic Preservation Officer (SHPO) for purposes of Section 106 compliance on tribal lands. In accordance with provisions of the National Historic Preservation Act, designation of a THPO is upon approval by the Director, National Park Service.