CHAPTER 3:
Alternatives, Including the Preferred Alternative

INTRODUCTION

This *South Unit General Management Plan / Environmental Impact Statement* (South Unit GMP/EIS) presents four alternatives that describe how natural and cultural resources and visitor uses will be managed at the South Unit of Badlands National Park (South Unit). The alternatives consist of alternative A, the No-Action Alternative (continue current management); alternative B (expand interpretive opportunities); alternative C (focus on resource protection/preservation); and alternative D, the preferred alternative (protect resources while expanding interpretive experience).

The alternatives, based on the park's mission, purpose, and significance, present different ways to manage resources and visitor use and improve the park's facilities and infrastructure. The No-Action Alternative is included as a baseline for comparing the environmental consequences that could result from implementing each action alternative.

As detailed in "Chapter 2: Park Management Options," the planning team also developed management options for the South Unit. The management options documented as a part of the South Unit GMP/EIS will require government-to-government negotiation for management control over the lands. The outcome of such negotiations will form the basis for determining which management option will ultimately work for the greater good for both entities while keeping in mind the goals and objectives embodied in the resource and visitor experience alternatives. Both parties agree that the resource and visitor experience alternatives are reasonable and that whoever is ultimately responsible for managing the South Unit will be responsible for seeing that the direction specified in the final South Unit GMP/EIS is carried out accordingly.

Tables that summarize the key differences between the alternatives and the impacts that could be expected from implementing each alternative are presented at the end of this chapter. The "Comparison of Environmental Consequences" table (at the end of this chapter) is based on the analyses in "Chapter 5: Environmental Consequences."

IMPLEMENTATION OF THE GENERAL MANAGEMENT PLAN

Although the South Unit GMP/EIS provides the analysis and justification for future South Unit funding proposals, this GMP/EIS does not guarantee future National Park Service (NPS) funding. Many actions would be necessary to achieve the desired conditions for natural resources, cultural resources, visitor experience, and facilities as envisioned in this plan. The NPS or the Oglala Sioux Tribe (OST) will request funding to achieve these desired conditions; although both entities hope to secure this funding and will prepare accordingly, the South Unit may not receive enough funding to achieve all desired conditions.

The implementation of the approved plan, no matter which alternative, will depend on future NPS funding levels and servicewide priorities, and on partnership funds, time, and effort. The approval of a GMP does not guarantee that funding and staffing needed to implement the plan will be forthcoming. Full implementation of the plan could be many years in the future.

The implementation of the approved plan also could be affected by other factors. Once the South Unit GMP/EIS has been approved, additional feasibility studies and more detailed planning and appropriate environmental documentation may be required before any proposed actions can be carried out. Additional planning and/or revisions may be needed, depending on which alternative is implemented and what funding levels are achieved. These more detailed plans would tier off of this South Unit GMP/EIS, describing specific actions managers intend to take to achieve desired conditions and long-term goals. Some of these implementation plans are prepared for parks in response to NPS policies.

When the Record of Decision is signed, implementation would not be possible without legislation and funding. Any change in management entity would take place only after action by Congress. The status quo would remain in effect until both the legislation and funding are in place. In the interim, the NPS and the Tribe agree to prepare for and implement the parts of this plan that are possible and appropriate.

This GMP/EIS calls for a commitment to the NPS *Organic Act* which would include an overall general adherence to NPS policies, regulations, guidelines, and laws and Tribal law, policies and resolutions. The combination of these could alter the management actions and practices of the South Unit in ways unforeseen at this time.

MANAGEMENT ZONES

Management zones prescribe how different areas of the South Unit would be managed and are thus focused on the future or desired conditions. Each management zone specifies complementary natural resource conditions, cultural resources conditions, opportunities for visitor experiences, and appropriate facilities, and combines these into a possible management strategy that could be applied to locations within the South Unit. As such, management zones describe the management priorities or long-term goals for various areas.

Regardless of the title of the management zone, the NPS and the OST intend to preserve and protect natural and cultural resources to the greatest extent possible. An overview of the management zones is provided in table 1. The action alternatives presented later in this chapter each propose a different concept for managing the South Unit; therefore, the management zones were placed in different locations or configurations on the map according to the overall focus of each alternative.

TABLE 1. MANAGEMENT ZONES FOR THE SOUTH UNIT

Management Zone	Desired Resource Condition	Desired Visitor Experience and Visitor Uses	Kind and Level of Management Activities	Kind and Level of Development
Natural Area / Recreation	Preservation of native species and natural processes; cultural and paleontological resources actively, monitored and protected; moderate tolerance for resource impacts to accommodate visitor safety.	Emphasis on experiencing an encounter with natural setting, intimate and away from vehicles; pristine night skies, good visibility, and unobstructed views prevalent; moderate tolerance for resource modifications and degradation related to visitor use or facility development; opportunities for visitors to interact personally with natural surroundings on unpaved designated trails, where developed; moderate probability of encountering other visitors; limited on-site interpretation and interaction with park staff; access by hiking or pack stock use; pack stock not allowed on designated hiking trails; camping allowed; possible limits on visitation and length of stay to protect resources and maintain desired visitor experiences; appropriate commercial services (e.g., guiding) could be permitted.	Management actions focused on preventing resource impacts and providing for visitor safety.	Development limited to unpaved trails, picnic sites, wildlife handling facilities, and research sites.
				

Management Zone	Desired Resource Condition	Desired Visitor Experience and Visitor Uses	Kind and Level of Management Activities	Kind and Level of Development
Preservation	Natural resources are preserved or restored so as to showcase a full complement of native species and natural processes; natural sounds, night sky, air quality, visibility, and unobstructed views are protected and maintained in excellent condition; cultural resources are preserved and protected; very low tolerance for resource modifications and degradation related to visitor use.	Visitor experience is self-directed; no designated trails; high level of solitude, self-reliance; minimal interaction with park staff or other visitors; many opportunities for independence, closeness to nature, challenge, and adventure. No designated trails; access could be limited to hiking or pack stock; camping possibly allowed; possible limits on visitation and length of stay to protect resources and maintain desired visitor experiences. Appropriate visitor services could be permitted.	"Minimum tool" principle used in research and management activities; evidence of management activities minimal and subtle.	Trails and other facilities not developed or maintained.
				

Management Zone	Desired Resource Condition	Desired Visitor Experience and Visitor Uses	Kind and Level of Management Activities	Kind and Level of Development
Research	Maximum preservation of irreplaceable, particularly sensitive resources of high scientific, cultural, or ecological value; such resources will be preserved in the most appropriate way—in situ or by extraction; very low tolerance for resource degradation.	Limited access for research purposes or American Indian traditional uses; visitors primarily experience the area through interpretation and educational programming in other areas; paleontological quarry area developed for research and educational purposes.	Management actions focus on resource values and research benefits.	Development temporary; done to support safety of researchers and scientific research, American Indian traditional practices, or preservation of the resource.
				

Management Zone	Desired Resource Condition	Desired Visitor Experience and Visitor Uses	Kind and Level of Management Activities	Kind and Level of Development
Development	Natural resources are preserved to the degree possible, while allowing development in a naturally compatible manner; resources could be modified to provide for visitor access, park operations, and administrative needs; development zone would not be placed in areas with sensitive natural or cultural resources; cultural and paleontological resources are provided maximum protection through inventories/surveys and mitigation prior to actions that could disturb them.	Visitor services and orientation focused on an overview of park's purpose and significance; visitors have access to concessions, developed campgrounds, restrooms, lodging, food service, and sales; high level of interaction with other visitors, groups, and park staff; visitors could encounter many human sounds and activities; visitor education self-directed or ranger led; visitor use in this zone generally highly structured; sightseeing walks, educational programs, viewing resources, organized activities common; camping in designated areas; appropriate visitor services could be permitted.	Management activities focused on visitor orientation, education, and safety; infrastructure maintained.	Orientation and interpretation facilities such as visitor centers, visitor contact stations, wayside exhibits, and interpretive media appropriate; restrooms and picnic facilities present; access to public areas easy; public access to housing, maintenance, and administration might be restricted.
				

USER CAPACITY

General management plans for national park system units must address user capacity management. The NPS defines user capacity as the type and extent of use that can be accommodated while sustaining the quality of a park unit's resources and visitor experiences consistent with the park unit's purpose.

User capacity management involves establishing desired conditions, monitoring, and taking actions to ensure that the park unit's values are protected. The premise is that with any visitor use comes some level of impact that must be accepted; therefore, it is the responsibility of the NPS to decide what level of impact is acceptable and what management actions are needed to keep impacts within acceptable limits.

Instead of just tracking and controlling the number of visitors, staff manages the levels, types, and patterns of visitor use as needed to preserve the condition of the resources and quality of the visitor experience. The monitoring component of this process helps staff evaluate the effectiveness of management actions and provides a basis for informed adaptive management of visitor use.

The foundation for user capacity decision making is the qualitative description of desired resource conditions, visitor experience opportunities, and general levels of development and management described in the management zones. Based on these desired conditions, indicators and standards are identified. An indicator is a measurable variable that can be used to track changes in resource and social conditions related to human activity so that existing conditions can be compared to desired conditions. A standard is the minimum acceptable condition for an indicator.

User capacity decision making is a continuous process; decisions are adjusted based on monitoring the indicators and standards. Management actions are taken to minimize impacts when needed. The indicators and standards included in this GMP/EIS would generally not change in the future. However, as monitoring of the park's conditions continues, managers may decide to modify, add, or delete indicators if better ways are found to measure important changes in resource and social conditions. Information on the monitoring efforts, related visitor use management actions, and any changes to the indicators and standards would be available to the public.

With limited staffs and budgets, managers must focus on areas where there are definite concerns and/or clear evidence of problems. This means monitoring should generally take place where conditions are approaching standards or violate standards, conditions are changing rapidly, specific and important values are threatened by visitation, and/or the effects of management actions taken to address impacts are uncertain.

This GMP/EIS

- Identifies park purpose and significance, which establishes the basic framework for all aspects of future planning and management of the park, including determining the user capacity of areas within the park.
- Describes management zones that provide the basis for managing user capacity. Each zone prescribes desired resource conditions, visitor experiences, and recreational opportunities for different areas of the park. The zones also prescribe the types and levels of developments necessary to support these conditions, experiences, and opportunities. This element of the framework is the most important to long-term user capacity management because it directs the park managers on ways to best protect resources and visitor experiences while offering a diversity of visitor opportunities.
- Evaluates the tradeoffs of having different proportions and distributions of management zones via the alternatives and it identifies a preferred alternative that will give park managers a course of action for managing park resources over the next 15 to 20 years.

- Describes the park's most pressing use-related resource and visitor experience concerns, existing and potential, given the park's purpose, desired conditions, and the vulnerability of specific resources and values. This helps managers focus limited resources on the most significant user capacity indicators.
- Provides park managers focus on the areas where they need to begin developing indicators, establishing standards and collecting baseline data and representative examples of management strategies to avoid or minimize unacceptable impacts from visitor use are identified.

The last steps in the user capacity process, which will continue indefinitely, involve monitoring the South Unit's indicators and taking management actions as needed to minimize impacts. As a means for providing flexibility in the face of changing conditions, managers will use an adaptive management approach when appropriate. (Adaptive management is a management system based on clearly identified outcomes, monitoring to determine if management actions are meeting outcomes, and if not, making changes that will best ensure that outcomes are met or that outcomes are reevaluated.) If new use-related resource or visitor experience concerns arise in the future, additional indicators and standards will be identified as needed to address these concerns.

POTENTIAL USER CAPACITY INDICATORS AND STANDARDS

The following have been chosen out of many possible indicators because they address the type and levels of visitor use expected over the life of this document. These indicators apply to all the management zones, and reflect the different levels of use appropriate to different zones. The potential priority resource indicators selected are associated with the disturbance of, and damage to paleontological features and archeological sites, significant changes in visitor use to the backcountry of the South Unit given the potential for impacts to sensitive resources in areas that currently receive little to no visitor use, and visitor satisfaction.

Table 2 describes the user capacity indicators, standards, monitoring and management strategies for the South Unit. This information was developed after careful consideration of key aspects of desired resource conditions and visitor experiences, public scoping information, relevant research studies, staff management experience and other park data sources. The planning team considered many potential issues and related indicators that would identify impacts of concern, but those described below were considered the most salient given the importance and vulnerability of the resource or visitor experience affected by visitor use.

TABLE 2. POTENTIAL INDICATORS, STANDARDS, MONITORING, AND MANAGEMENT ACTIONS

Management Zone	Indicators	Standards	Monitoring	Management Actions
All	Resource impacts including adverse impacts to paleontological sites, trails, archeological sites, and vegetation. Number of incidents resulting in a criminal violation and warnings related to resource damage. Number of informal trails.	No new observable or measurable adverse impacts or damage to paleontological features (baseline values). No incidents resulting in criminal violations and few warnings. No informal trails.	Staff observations, visitor complaints, remote sensing, and photo surveys. Law enforcement patrols and evaluation of violation logs. Conduct informal trail surveys every 3–5 years to determine the extent of disturbance.	Increased enforcement and visitor contacts; increased education about the sensitivity of paleontological resources and promotion of low impact visitor use practices through informal contact and formal programming; change site management techniques (e.g., fences, barriers, sensors and monitoring devices); area or temporal closures; implement permit systems.
All	Visitor satisfaction.	Visitor satisfaction scores related to visitor interactions are similar to other parks.	Visitor survey results or periodic special visitor use studies (10 years – University of Idaho co-op studies) and visitor complaints.	

ALTERNATIVES

Many aspects of the desired future conditions for the South Unit are defined in the establishing legislation, the purpose and significance statements, and the servicewide mandates and policies described previously in this document. Within these parameters, the NPS solicited input from Tribal officials, Tribal members, the public, park staff, government agencies, and other organizations regarding issues and desired conditions for the park.

Planning team members gathered information about the park's resources, visitor activities, and the condition of the park's facilities. They considered which areas of the park attract visitors and which areas have sensitive resources. Using that information, the planning team developed multiple zones for guiding the management of the South Unit and its resources. The management zones are applied in varying combinations and locations in the action alternatives. These zones, described below, form the basis of the alternatives for the South Unit GMP/EIS.

The NPS developed three action alternatives and the No-Action Alternative to reflect the range of ideas proposed by the South Unit GMP/EIS team and the public. Each alternative consists of the following elements:

- Natural and cultural resource management.
- Visitor use and experience management.
- Visitor access and enjoyment.
- Staffing and cost.

The NPS would continue to follow existing servicewide mandates, laws, and policies under each of the action alternatives and the No-Action Alternative. Those mandates and policies are not repeated in this chapter. However, the management actions proposed in the alternatives do differ, and they are discussed in this chapter.

The action alternatives focus on what the resource conditions in the South Unit should be and which visitor experiences and opportunities should be available. The alternatives do not address the details of how these conditions and experiences should be achieved. More detailed plans or studies would be necessary before the developments or actions proposed in the alternatives could be built. As detailed plans or studies are implemented, individual environmental documents would be tiered off of this GMP/EIS.

The four alternatives presented here embody the range of input from the public and the NPS with regard to visitor experience/access, natural resource management, cultural resource management, and staffing and cost at the South Unit. The alternatives were created by establishing management zones to meet the various management goals.

In some cases, all action alternatives apply the same management prescription to the same area, as detailed in the "Elements Common to All Action Alternatives" section in this chapter.

For purposes of this GMP/EIS, a visitor center is a staffed permanent structure with a roof and four walls that houses an information desk, temporary and permanent exhibits, and public restroom facilities. A visitor contact station may have a roof and four walls, but it could be a two- or three-sided roofed structure, generally unstaffed, with informational exhibits or wayside-type displays, and no public restroom facilities. An entrance station has fee collection booths and may have a support building, which is generally not available to the public.

RESOURCE AND VISITOR EXPERIENCE ALTERNATIVES

The alternatives, each of which is consistent with maintaining the South Unit's purpose, significance, and fundamental resources and values, present different choices for how to manage resources, visitor use, and facilities within the South Unit. The alternatives as presented on the following pages would not change regardless of who (NPS or OST) manages the park in the future. The same resource management, visitor use and experience, staffing, and facility goals and needs would remain unchanged. All costs presented in the alternatives are based on the concept that the alternative has been fully implemented, and costs are based on 2010 dollars. The estimated costs provided are for alternative comparison purposes only. These costs are not to be used for programming and budgeting purposes.

ALTERNATIVE A: NO ACTION (CONTINUE CURRENT MANAGEMENT)

The No-Action Alternative primarily reflects current conditions and activities at the South Unit. This alternative is provided as a baseline against which to compare the action alternatives. Management zones, which are prescriptive (that is, they describe desired conditions for the future), would not be applied for the No-Action Alternative (refer to the alternative A map).

Resource Management

Under the No-Action Alternative, the NPS would not have an active restoration program. Presently, any restoration activity is conducted on an as-needed basis. The range survey currently underway on Range Unit 505 to determine management needs would continue until complete. Vegetation and wildlife surveys would be conducted as warranted, including annual surveys of pronghorn, deer, and bighorn sheep by the Oglala Sioux Parks and Recreation Authority (OSPRA). Mapping of prairie dog towns through the use of global positioning systems (GPS) and geographic information systems (GIS) would continue. Exotic plant species would be managed and/or native plant populations would be reintroduced on an as-needed basis.

The OST grazing leases would remain intact. Grazing would continue throughout the South Unit. Although grazing leases allow for bison, lessees do not currently graze bison in the South Unit. All grazing leases in the South Unit are managed by the BIA, except those in Range Unit 505.

No existing paleontological locations would be surveyed and the moratorium on paleontological collecting would remain in effect unless removed by the OST. Fossil collections would continue to be housed at the South Dakota School of Mines and Technology and in other off-site repositories.

No additional archeological surveys would be conducted unless necessary to meet *National Historic Preservation Act* compliance activities. Interpretation of Oglala Sioux history and culture would continue at the White River Visitor Center.

Programs to emphasize the preservation of Oglala Lakota language and culture would not be initiated. Historical exhibits would remain at the White River Visitor Center, which is staffed by OSPRA employees.

Visitor Use and Experience

The NPS and the OST would continue to share the responsibility for managing the White River Visitor Center. The visitor center would remain open in June, July, and August and would continue to be staffed by OSPRA personnel. The NPS would continue to design the exhibits, with OST input. The Bombing Range would continue to be interpreted through exhibits and programs. There would be few if any changes in the number of exhibits or interpretive staff at the White River Visitor Center. Interpretive activities and visitor education would be shared with the NPS.

Visitor Access and Enjoyment

No organized recreational opportunities, such as guided tours, developed hiking trails, or camping facilities (or areas designated for that purpose), would be provided.

Existing two-track roads would continue to provide access to the South Unit, and would not be improved or expanded.

No formal restrictions would be imposed by the park on use or visitation in ceremonial and other cultural sites of the South Unit. No interpretation of these areas would be provided.

Reliable potable water would be available only at the White River Visitor Center, where it is available through existing wells.

Staffing and Cost

The staffing level under the No-Action Alternative would continue to be the equivalent of two full-time staff members; this number is equal to the current 2010 staffing level.

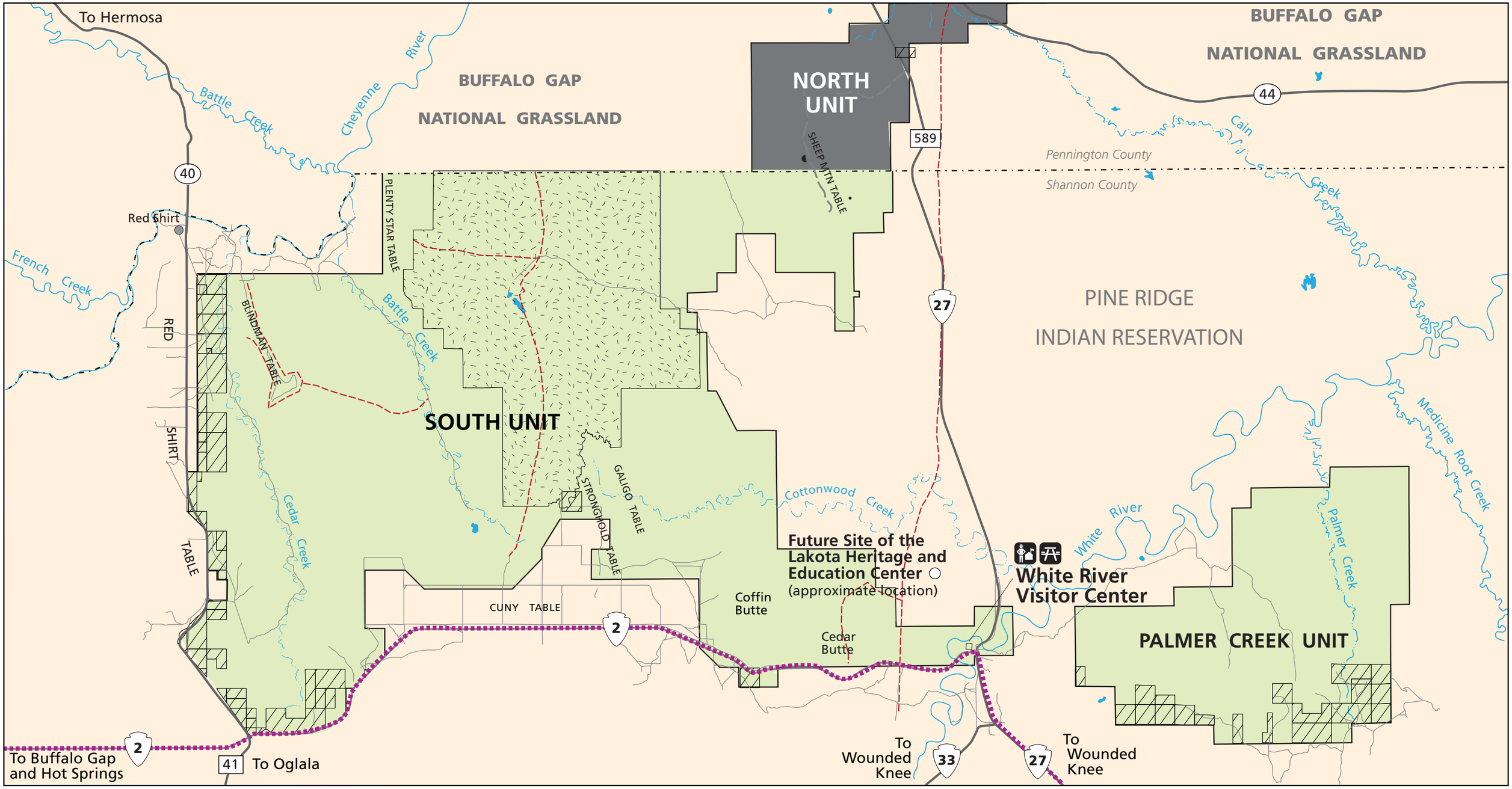
Under the No-Action Alternative, no new development is planned. The White River Visitor Center would be maintained as it is currently maintained. Scheduled cyclical maintenance would continue to take place as the budget allows. Development of the Lakota Heritage and Education Center (LHEC) would continue as funding permits. For more details concerning the LHEC refer to the "Elements Common to All Action Alternatives" section in this chapter. At this no improvements are planned for the South Unit.

The cost estimates provided here are given for comparison purposes only; they are not to be used for budgeting purposes. The park proposed a budget total of approximately $160,000 in fiscal year (FY) 2009, encompassing salaries, travel, and supplies. The park anticipates a budget of approximately $183,000 for FY 2010. Vacancies would be filled as funding permits. For a comparison of the cost of staffing needs between alternatives, refer to appendix D.

ALTERNATIVE B: EXPAND INTERPRETIVE OPPORTUNITIES

Alternative B primarily focuses on expanded access and opportunities for visitors to the South Unit. Opportunities include interpretation of natural and cultural resources. The designated management zoning reflects this focus and would be delineated as follows (refer to the alternative B map):

- **Natural Area / Recreation Zone**. Approximately 89 percent of the lands within the South Unit would be designated as Natural Area / Recreation Zone, which would represent the basic core or center of the park and the Palmer Creek Unit. This zone would include primitive campgrounds, backcountry patrol / equestrian facilities, and access by paved and unpaved pedestrian and horseback-riding trails. Visitors would have the opportunity to freely hike and camp with very limited controls or encounters with other visitors. This zone would provide a sense of remoteness, intimacy, and solitude.
- **Development Zone**. Approximately 11 percent of the lands located along the park perimeter would be designated as the Development Zone. Within this zone, visitors would experience the greatest level of development and frequent contact with other visitors and uniformed park staff. This is the area where visitors would receive information, orientation, education, and visitor services. Developments, such as small wayside parking areas and related facilities, would be carefully tucked into the landscape so as not to become obtrusive. Such areas would offer visitors the opportunity to leave their vehicles and take advantage of interpretive exhibits and short hiking trails. Resources would be intensely managed to preserve and protect the natural and cultural values of the zone while providing a variety of amenities.



Pine Ridge Indian Reservation Boundary
Crazy Horse Scenic Byway
Unpaved road
Unpaved road (passable only when dry)
Paved road
Trail
Overlook
Park North Unit
Park South Unit
Private Lands
Range Unit 505
Ranger station
Restrooms
Picnic area
Self-guiding trail
Campground
Primitive campground

Note: The NPS recognizes private in-holdings and other valid existing rights, and the management zones shown are not intended to imply otherwise.

North

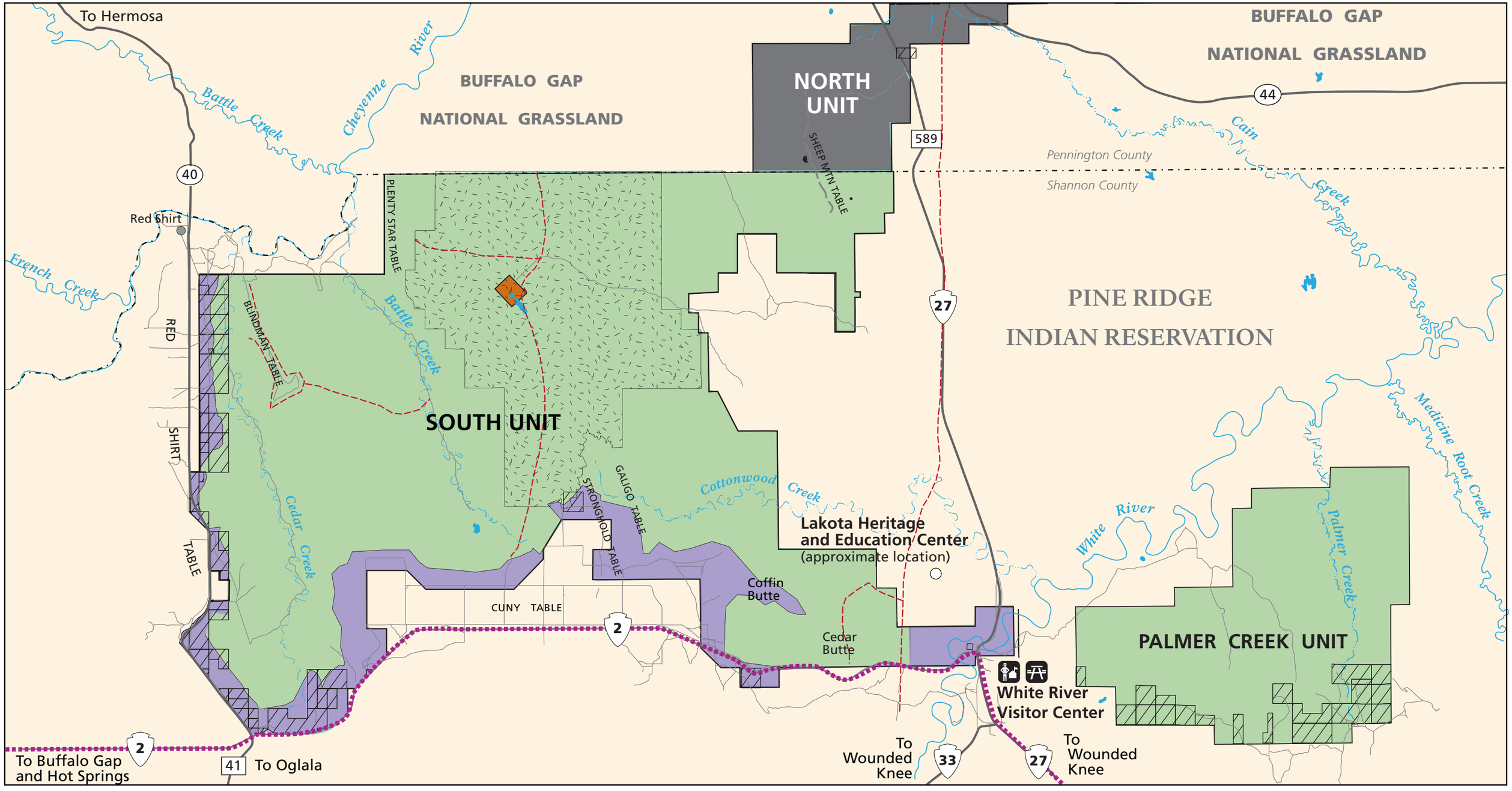
0 1 Kilometer 5

0 1 Mile 5

ALTERNATIVE A
No Action

BADLANDS NATIONAL PARK
United States Department of the Interior / National Park Service

ver. 2011-11-02



- Pine Ridge Indian Reservation Boundary
- Crazy Horse Scenic Byway
- Unpaved road
- Unpaved road (passable only when dry)
- Paved road
- Trail
- Overlook
- Park North Unit
- Private Lands
- Range Unit 505
- Natural Area Recreation Zone
- Preservation Zone
- Research Zone
- Development Zone
- Ranger station
- Picnic area

North

0 1 Kilometer 5

0 1 Mile 5

ALTERNATIVE B

EXPAND INTERPRETIVE OPPORTUNITIES

BADLANDS NATIONAL PARK

United States Department of the Interior / National Park Service

ver. 2011-01-04

Note: The NPS recognizes private in-holdings and other valid existing rights, and the management zones shown are not intended to imply otherwise.

- **Research Zone**. Less than 1 percent of the park would be designated as the Research Zone, located in the north-central part of the park. Within this zone, there would be limited access for research purposes or American Indian traditional uses. Visitors would primarily experience the area through interpretation and educational programming in other areas. The paleontological quarry area would be developed for research and educational purposes. Development would be temporary and done to support paleontological research and provide for the visitor health and safety. Visitors would have the opportunity to gain understanding about the value of research and the process of caring for paleontological resources.

Resource Management

Under alternative B, park managers would develop active restoration programs. Surveys would be developed for all resources, including fossil resources, cultural resources, wildlife, and vegetation, to identify all natural and cultural resources and create databases to support management decisions. Bison would be reintroduced in some areas of the South Unit, depending on existing grazing leases.

Exotic plants would be managed using integrated weed management strategies. Native plants would be reintroduced to disturbed sites. The South Unit would be restored to natural conditions (where necessary) by removing exotic species and revegetating disturbed sites with native plants.

The grazing leases would remain intact into the foreseeable future and would be managed to ensure the sustainability of native vegetation. The long-range goal would be to eliminate grazing in Range Unit 505, which is the range unit most suitable for near-wilderness conditions.

Surveys of existing and new paleontological locations would be conducted. The moratorium on paleontological collecting would be lifted. One active quarry would be open to visitor viewing. Paleontology digs, monitored by trained park personnel, might be observed by visitors. All fossils collected from quarry operations and associated surveys would be prepared and curated by trained park personnel. As appropriate, newly collected fossils and the specimens from the quarry and surveys would be stored in an off-site museum until the LHEC museum is fully operational. The existing fossil collection would remain housed in off-site repositories, such as the South Dakota School of Mines and Technology. Park personnel would collect fossils deemed to be at risk of theft or erosion. Where feasible, fossils would be cast for exhibit. Paleontological and geological resources would be protected from poaching through increased law enforcement patrols.

Surveys and inventories of archeological resources would be developed and findings documented. Interpretation of Oglala Sioux history and culture would continue at the White River Visitor Center.

Priority would be placed on developing and expanding a cultural resource survey to better protect and preserve cultural, historic, and spiritual sites and materials. Interpretation would be available at some cultural sites across the South Unit, and programs offered by Tribal members would focus on aspects of Oglala Sioux history and culture. Historical exhibits would remain on display at the White River Visitor Center, which would be staffed by Tribal employees. There would be few, if any, changes in the number of exhibits or interpretive staff at the White River Visitor Center.

Visitor Use and Experience

Visitor centers would be staffed by park personnel. Seasonal operations would continue under alternative B. The NPS would continue to design exhibits, with OST input. In alternative B, interpretive opportunities would be offered to visitors in a variety of new ways:

- Historic and cultural interpretive opportunities would include activities such as powwows and ceremonies. At some cultural or ceremonial sites, as

well as at campgrounds, interpretive activities would be presented so visitors could learn more about the Lakota culture and history. Programs would feature Tribal members who wear and explain traditional dress, and story-telling and oral history would be presented by Tribal elders.

- Oglala guides would conduct travel into the backcountry and less-developed areas. The guides would interpret natural resources, the history of the area, Oglala culture, and traditional Lakota land management.
- Paleontology digs, monitored by trained park personnel, might be observed by visitors, and outdoor classrooms might be offered by the staff.
- Interpretive signs would be placed along roads to identify locations, animals and plants, historic locations, and mileages.

Visitor Access and Enjoyment

A more reliable potable water supply would be developed for facilities in the vicinity of the White River Visitor Center. Future evaluations would be made to explore the possibility of a campground and concession development near the White River Visitor Center. Recreational opportunities would be available through guided trail rides, and hiking trails and campsites would be established. Hiking would be allowed on some primitive trails, with limited access to the Palmer Creek Unit. Primitive camping would allow for unguided camping experiences, and limited overnight backpacking by permit. Visitors could plan and schedule backcountry camping trips at a backcountry contact station / visitor center. Guided horse camping trips would be offered. Developed camping would be provided. A backcountry ranger patrol station with equine facilities would be developed in the interior, most likely on the west side of the park.

Main roads in the South Unit would be improved and perimeter access would be focused in one location with trails, trailheads, parking areas, rest areas with comfort stations, overlooks, and wayside exhibits. Visitors could explore the South Unit at dispersed visitor access points along the perimeter. The existing road to the quarry area (Research Zone) would be improved and would include parking, restrooms, trailheads, and campsites. Existing two-track roads would continue to provide access to the South Unit. The main roads in the South Unit would be improved. Eco-tours featuring birds and wildlife would be offered.

Hiking and horseback-riding trails would be developed, along with trailheads with parking, comfort facilities, interpretive signs, and informational signage. A mountain-biking trail might be developed. Bicycling along the roads in developed zones would be encouraged in places where bike lanes could be established.

Access would be afforded through the means identified above, thus restricting unguided access to ceremonial and other cultural sites of the South Unit. Interpretation of these areas would be provided by guides.

There would be increased tap-ins of the OST and rural water supplies to provide water for fire protection and campground development. Reliable potable water would be available at the White River Visitor Center.

Staffing and Cost

Full staffing levels under this alternative would reach 25 FTEs under full implementation at a cost of approximately $1.7 million per year. Refer to appendix D for more information concerning the functions, grades, and areas of responsibility for additional staff. This appendix also compares staffing needs of the alternatives.

Volunteers, a key component of a park manager’s ability to protect resources and provide high-quality visitor services, would be encouraged. If funding and staffing for some elements of this alternative were substantially reduced or should become unavailable from federal sources, park managers would consider other options, such as expanding the park volunteer program or developing partnerships with other agencies, organizations, businesses, and/or the OST, to accomplish these elements.

One-time facility needs and costs for this alternative are estimated at approximately $22.2 million. Refer to appendix D for a comparison of one-time facility needs related to each alternative.

One-time non-facility costs include actions for the preservation and interpretation of cultural and natural resources not related to facilities. These are costs that would require substantial funding over and above park annual operating costs. Based on the goals and needs identified in the resource management section of this document, the park has identified certain plans, supporting surveys, and inventories that would be needed to manage resources and provide for visitor use. These plans, surveys, inventories, and related costs are identified in appendix D. The total non-facility cost is estimated between $2.2 and $2.95 million.

ALTERNATIVE C: FOCUS ON RESOURCE PROTECTION AND PRESERVATION

Alternative C primarily focuses on preservation and protection of natural and cultural resources, and restoration of natural systems. Access would be limited primarily to the perimeter of the South Unit. Visitor opportunities include interpretation of natural, cultural, and paleontological resources. The designated management zoning reflects this focus and would be delineated as follows (refer to the alternative C map):

- **Natural Area / Recreation Zone**. Approximately 21 percent of the lands in alternative C would be designated as Natural Area / Recreation Zone. This zone would be located on the southwest perimeter of the park and the Palmer Creek Unit. This zone would include primitive campgrounds, backcountry patrol / equestrian facilities, and access by unpaved pedestrian and horseback-riding trails. Visitors would experience the opportunity to freely hike and camp with very limited controls or encounters with other visitors. This zone would provide a sense of remoteness, intimacy, and solitude.
- **Development Zone**. Approximately 2 percent of the lands would be designated as Development Zone. The majority of the development zone would be located in the White River visitor use area and a small amount on Red Shirt Table on the western perimeter of the park. Within this area visitors would experience the greatest level of development and frequent contact with other visitors and uniformed park staff. This is the area where visitors would receive the greatest level of information, orientation, education, comfort, and safety.
- **Preservation Zone**. Approximately 77 percent of the park lands would be designated as Preservation Zone. To access the interior of the South Unit, visitors would need to obtain a permit or guide due to the spiritual and ceremonial value of the resource. This area would offer the highest level of remoteness, intimacy, and sense of solitude found anywhere in the park because of its location and highly controlled access to the public.

Resource Management

Under alternative C, park managers would develop active restoration programs. Surveys would be developed for all resources, including fossil resources, cultural resources, wildlife, and vegetation, to identify all natural and cultural resources and create databases to assist with park management decisions. Natural resource inventories, baseline studies, and monitoring programs would continue in order to inform the efforts to restore the South Unit, and a plan would also be initiated to study the reintroduction of native species, threatened and endangered species, and state species of concern. Bison would be reintroduced in Range Unit 505 of the South Unit to create a preserve/reserve.

Exotic plant species would be managed using integrated weed management strategies. Native plants would be reintroduced to disturbed sites. The South Unit would be restored to natural

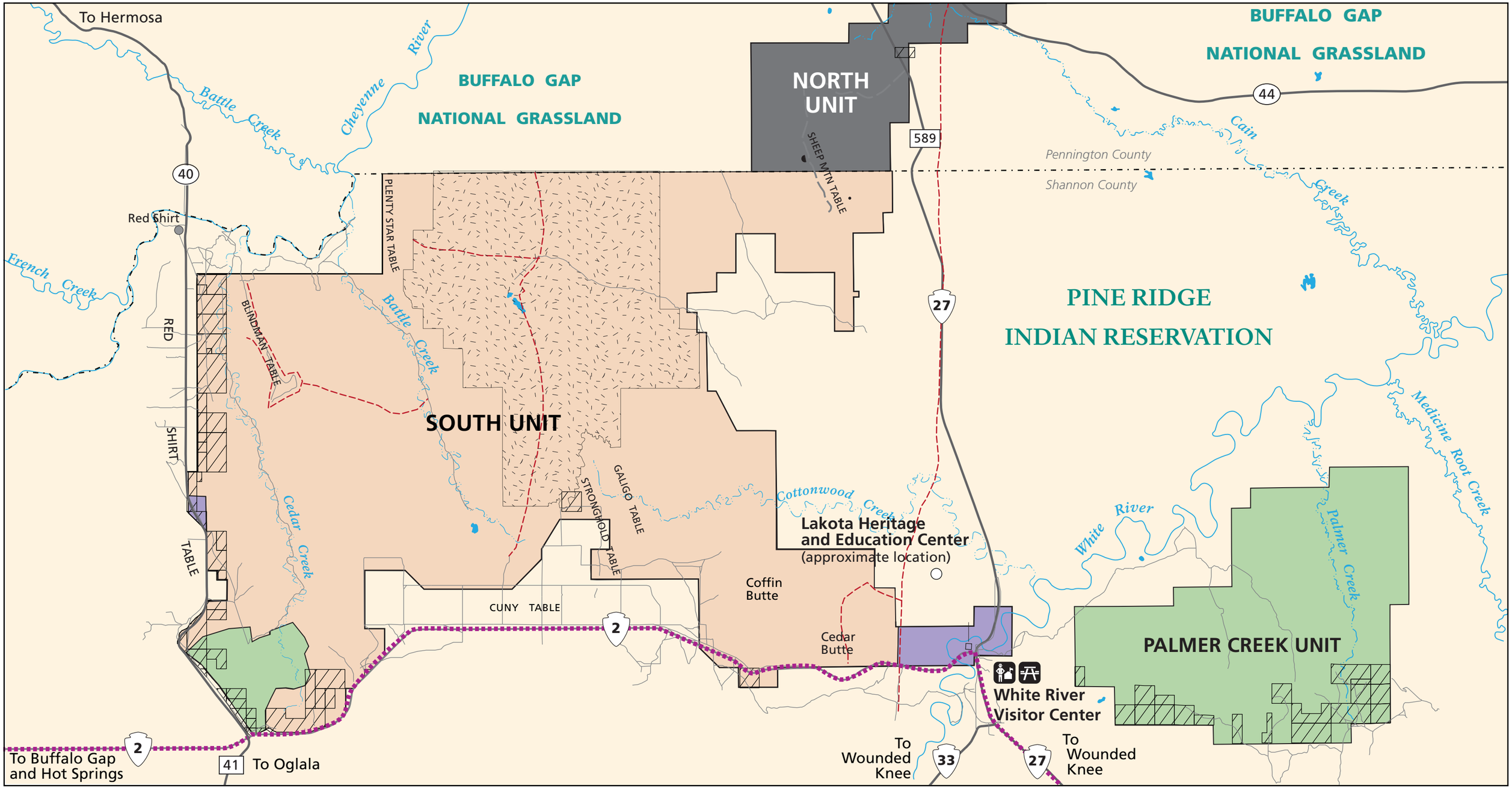
conditions (where necessary) by removing exotic species and revegetating disturbed sites with native plants. Management would focus on reintroducing culturally significant plant populations. Vegetation would be surveyed and monitored, with emphasis on rare, threatened, and endangered plants.

Bison would be reintroduced in Range Unit 505 of the South Unit to create a preserve/reserve. The grazing leases would remain intact into the foreseeable future, but would gradually be eliminated.

Surveys of existing and new paleontological locations would be conducted. The moratorium on paleontological collecting would be lifted. All fossils collected during surveys would be prepared and curated by trained park personnel. As appropriate, newly collected fossils from surveys would be stored in an off-site museum until the LHEC museum is fully operational. Where feasible, all known artifacts and fossil specimens that have been acquired from the South Unit would be located, retrieved, and housed in a museum at the LHEC. Park personnel would collect fossils deemed to be at risk of theft or erosion. Where feasible, fossils would be cast for exhibit. Paleontological and geological resources would be protected from poaching through increased law enforcement patrols.

Priority would be placed on developing and expanding a cultural resource survey and on protecting and preserving cultural materials, including archeological and fossil sites, and medicinal and edible plants (ethnobotanicals).

Cultural resources would be documented and assessed for significance. Efforts would be made to identify and preserve cultural, historical, and spiritual sites, and visitation would be restricted in sacred areas. Areas would be set aside for ceremonial purposes and would be available to visitors only at certain times. Powwows might be held, but no facility would exist expressly for that purpose. Interpretation of Oglala Sioux history and culture would continue at the White River Visitor Center and the LHEC museum.



- Pine Ridge Indian Reservation Boundary
- Crazy Horse Scenic Byway
- Unpaved road
- Unpaved road (passable only when dry)
- Paved road
- Trail
- Overlook
- Park North Unit
- Private Lands
- Range Unit 505
- Natural Area Recreation Zone
- Preservation Zone
- Research Zone
- Development Zone
- Ranger station
- Picnic area

North

0 1 Kilometer 5

0 1 Mile 5

ALTERNATIVE C

FOCUS ON RESOURCE PROTECTION & PRESERVATION

BADLANDS NATIONAL PARK

United States Department of the Interior / National Park Service

ver. 2011-01-04

Note: The NPS recognizes private in-holdings and other valid existing rights, and the management zones shown are not intended to imply otherwise.

Visitor Use and Experience

Visitor centers would be staffed by park personnel. Seasonal operations would continue in alternative C. The NPS would continue to design exhibits, with OST input. In alternative C, interpretive opportunities would be offered to visitors in a variety of new ways:

- Promote a better understanding of Lakota culture through a variety of education and interpretive offerings, such as living history and opportunities to meet with, listen to, and talk with Tribal elders, spiritual leaders, and native interpreters. Vista points around the perimeter would include wayside exhibits on the cultural importance of ethnographic resources.
- Alternative C would emphasize the preservation of Lakota language and culture through a variety of education and interpretation programs, such as family history and living history, monuments that memorialize events in Lakota history, and exhibits that emphasize native background and history. There would be a focus on elders and spiritual leaders. The Lakota language and Oglala culture would be incorporated into programs, interpretive displays, and wayside exhibits. Bilingual (English and Lakota) signs would be used on roads, in interpretive displays, and elsewhere.
- Historic and cultural discovery would occur at activities such as powwows and ceremonies. At some cultural or ceremonial sites, as well as at campgrounds, interpretive activities would be presented so visitors could learn more about the Lakota culture and history. Programs would feature Tribal members who wear and explain traditional dress, and story-telling and oral history would be presented by Tribal elders.
- The exhibits at the White River Visitor Center would be improved and expanded and an entrance station would be developed in the vicinity of the White River Visitor Center. A visitor contact station would also be developed on the west side of the South Unit. Interpretation and orientation information would also be available at the LHEC.

Visitor Access and Enjoyment

Alternative C envisions developing a new visitor contact station in the vicinity of the White River Visitor Center and in the general location of the LHEC. For more details concerning the LHEC refer to the “Elements Common to All Action Alternatives” section in this chapter. Some of these exhibits would focus on the cultural importance of ethnographic resources. The Lakota language and Oglala culture would be incorporated in the programs, interpretive displays, and wayside exhibits. An entrance station would be developed in the vicinity of the White River Visitor Center, and staff housing, which includes a ranger residence and maintenance area, would be expanded and improved to accommodate the increase in staff.

A museum for artifacts, fossil resources, and natural history specimens would be part of the LHEC.

Recreational opportunities would be available through guided trail rides and hiking trails and primitive campsites established along the southwest perimeter of the park and within the Palmer Creek Unit. Hiking would be allowed on some primitive trails in the Natural Area / Recreation Zone, with limited access to the Palmer Creek Unit. Primitive camping would be allowed by permit in designated areas in the Natural Area / Recreation Zone. Visitors (with permits) could plan and schedule guided backcountry camping trips into the interior at a backcountry contact station / visitor center. Guided horse camping trips would be offered. Developed camping would be provided in the Development Zone.

Visitors could explore the South Unit at dispersed visitor access points along the perimeter. A backcountry ranger patrol station

with equine facilities would be developed in the interior, most likely on the west side of the park.

To limit the impacts on the natural and cultural environment, development and visitor activities would be restricted mostly to the perimeter of the South Unit. Developed perimeter access would be focused in one location with trails, trailheads, parking areas, rest areas with comfort stations, overlooks, and wayside exhibits. Minimal development would accommodate primitive camping in the Natural Area / Recreation Zone in the southwestern portion of the South Unit. Where bike lanes could be safely provided, bicycling along the roads in developed zones would be encouraged. There would not be any improved roads providing access to the interior.

The existing two-track roads would continue to provide administrative access to the South Unit, and would undergo only minimal improvement.

Park management would institute a permit and reservation system for unguided access into the interior. Guided trail tours would take visitors to select areas in the interior. Unguided access to ceremonial and other cultural sites of the South Unit may be restricted at certain times; interpretation of these areas would be provided primarily by guides. There would be off-site interpretation of cultural and sacred sites. Pristine areas would be set aside for limited access through guided tours only.

Access would be afforded through the means identified above, thus restricting unguided access to ceremonial and other cultural sites of the South Unit.

There would be increased tap-ins of the OST and rural water supplies to provide water for fire protection and campground development. Reliable potable water would be available at the White River Visitor Center.

Staffing and Cost

Full staffing levels under this alternative would reach 21 FTEs under full implementation at a cost of approximately $1.6 million per year. Refer to appendix D for more information concerning the functions, grades, and areas of responsibility for additional staff. This appendix also compares staffing needs between the alternatives.

Volunteers, a key component of a park manager's ability to protect resources and provide high-quality visitor services, would be encouraged. If funding and staffing for some elements of this alternative were substantially reduced or should become unavailable from federal sources, park managers would consider other options, such as expanding the park volunteer program or developing partnerships with other agencies, organizations, businesses, and/or the OST, to accomplish these elements.

One-time facility needs and costs for this alternative are estimated at approximately $11.3 million. Refer to appendix D for a comparison of one-time facility costs related to each alternative.

This cost includes actions for the preservation and interpretation of cultural and natural resources not related to facilities. These are costs that would require substantial funding over and above park annual operating costs. Based on the goals and needs identified in the resource management section of this document, the park identified certain plans, supporting surveys, and inventories, described in appendix D that would be necessary to manage park resources and provide for visitor use. The total non-facility cost would be approximately $2.2 – $2.95 million.

ALTERNATIVE D: PROTECT RESOURCES WHILE EXPANDING INTERPRETIVE EXPERIENCE (PREFERRED ALTERNATIVE)

Alternative D (the preferred alternative) primarily focuses on restoration of natural ecosystems with expanded access and recreational opportunities for visitors. Additional opportunities would include interpretation of natural, cultural, and paleontological resources. The preferred alternative would promote understanding of Oglala Sioux history, culture, and land management principles through education and interpretation. Visitor activities would be focused in a developed front-country area that would provide a variety of services and amenities around the perimeter, while the interior of the South Unit would be managed as backcountry. Natural resources management would focus on survey and research to provide data to support future restoration, interpretation, and educational activities. Cultural resources management would focus on protection and preservation of historic, spiritual, and ceremonial sites and materials.

Management might seek easements or rights-of-way to gain access to some areas that are currently surrounded by private property. The designated management zoning reflects this focus and would be delineated as follows (refer to the alternative D map):

- **Natural Area / Recreation Zone**. Approximately 90 percent of the lands within the park would be designated as Natural Area / Recreation Zone. This zone would include primitive campgrounds, backcountry patrol / equestrian facilities, and access by unpaved pedestrian and horseback-riding trails. Visitors would have the opportunity to hike and camp with limited controls and few encounters with other visitors. This zone would provide a very high sense of remoteness, intimacy, and solitude.
- **Development Zone**. Approximately 10 percent of the lands, located on the perimeter of the park, would be designated as Development Zone. Within this area, visitors would experience the greatest level of development and frequent contact with other visitors and uniformed park staff. This is the area where visitors would receive information, orientation, education, and visitor services. Developments, such as small wayside parking areas and related facilities, would be carefully tucked into the landscape so as not to become obtrusive. Such areas would offer visitors the opportunity to leave their vehicles and take advantage of interpretive exhibits and short hiking trails. Resources would be intensely managed to preserve and protect the natural and cultural values of the zone while providing a variety of amenities.
- **Research Zone**. Less than 1 percent of the park would be designated as the Research Zone, located in the north-central part of the park. Within this zone, visitors would experience a highly controlled environment, with opportunities to access and view an active research quarry. Development would be temporary and done to support paleontological research and provide for visitor health and safety. Visitors would have the opportunity to gain understanding about the value of research and the process of caring for paleontological resources.

Resource Management

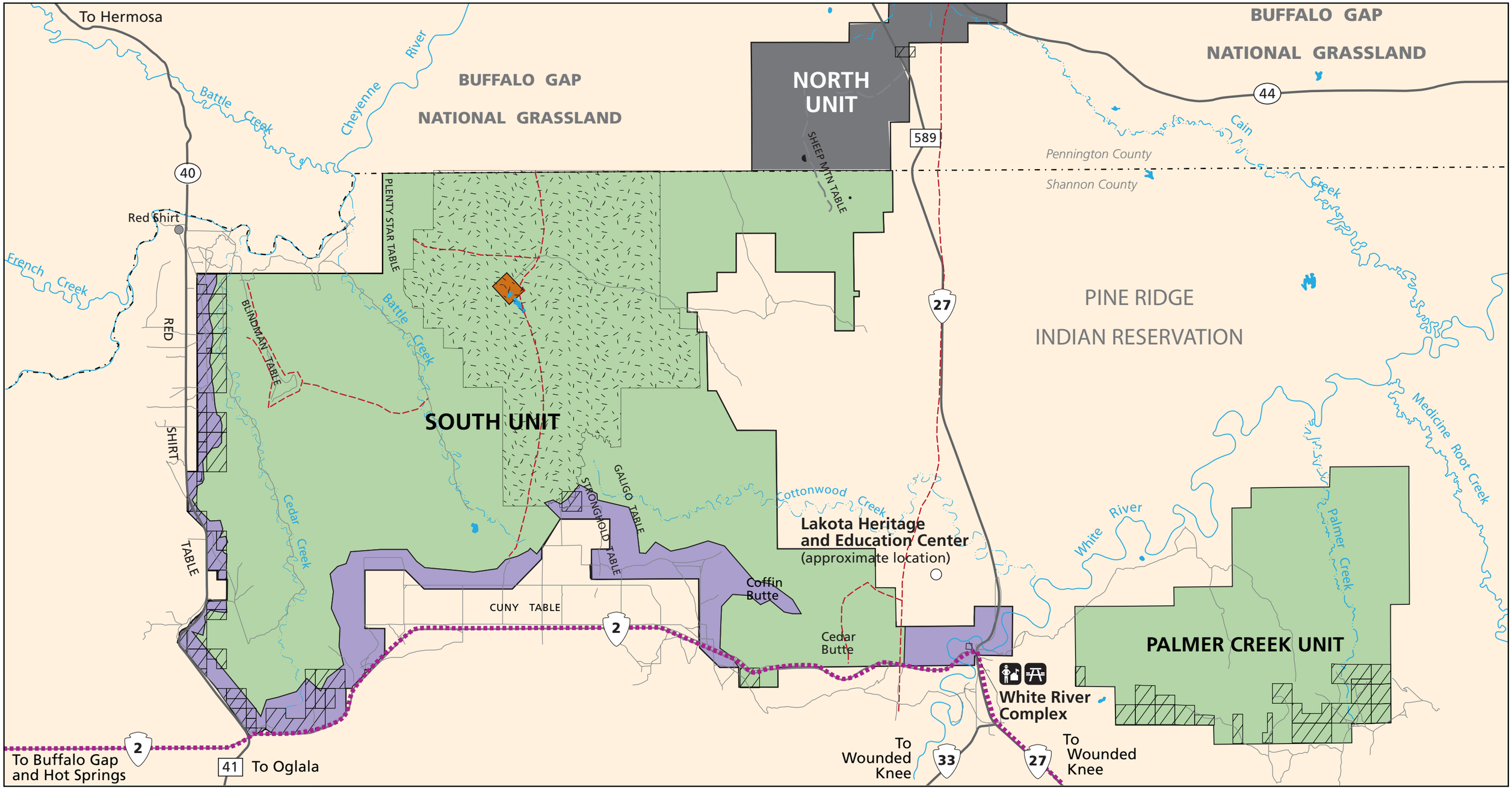
Under alternative D, the NPS would develop active restoration programs. Surveys would be developed for all resources, including fossil resources, cultural resources, wildlife, and vegetation, to identify all natural and cultural resources and create databases to support management decisions. Surveys, inventories, studies, and monitoring programs would be initiated to inform the planning efforts to restore the South Unit and reintroduce native species, threatened and endangered species, and state species of concern. Bison would be reintroduced

in the White River visitor use area for demonstration purposes, and in Range Unit 505 to create a bison preserve/reserve. In furtherance of that goal, grazing leases in other areas would remain intact until phased out or replaced by bison leases or a Tribal bison herd. Associated corrals and handling facilities would be developed to manage bison.

Exotic plants would be managed and/or native plant populations would be reintroduced. The South Unit would be restored to natural conditions (where necessary) by removing exotic species and revegetating disturbed sites with native plants. Management would focus on reintroducing culturally significant plant populations. Vegetation would be surveyed and monitored, with emphasis on rare, threatened, and endangered plants.

Existing and new paleontological locations would be surveyed. The moratorium on paleontological collecting would be lifted. One active quarry would be open to visitor viewing. Paleontology digs, monitored by trained park personnel, might be observed by visitors. All fossils collected from quarry operations and associated surveys would be prepared and curated by trained park personnel. As appropriate, newly collected fossils and the specimens from the quarry and surveys would be stored in a location deemed appropriate by the OST. Where feasible, all known artifacts and fossil specimens that have been acquired from the South Unit would be located, retrieved, and housed in a museum at the LHEC. Park personnel would collect fossils deemed to be at risk of theft or erosion. Where feasible, fossils would be cast for exhibit. Paleontological and geological resources would be protected from poaching through increased law enforcement patrols.

Priority would be placed on developing and expanding a cultural resource survey and on protecting and preserving cultural materials and medicinal and edible plants (ethnobotanicals). Cultural resources would be documented and assessed for significance. Attempts would be made to research and investigate locations and conditions of collections of archeological resources that have been removed from the South Unit. Where feasible, those collections or items would be returned and housed in the South Unit. Efforts would be made to identify and preserve cultural, historic, and spiritual sites, and visitation would be restricted in sacred areas. Some cultural and ceremonial sites would be closed to non-Tribal members. Interpretation of cultural and ceremonial sites would take place outside of those sites. Other areas that might be set aside for ceremonial purposes would be available to visitors only at certain times. Powwows might be held, but no facility would exist expressly for that purpose. Interpretation of Oglala Sioux history and culture would continue at the White River Visitor Center and the LHEC museum.



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- Unpaved road (passable only when dry)
- Paved road
- Trail
- Overlook
- Park North Unit
- Private Lands
- Range Unit 505
- Natural Area Recreation Zone
- Preservation Zone
- Research Zone
- Development Zone
- Ranger station
- Picnic area

North

0 1 Kilometer 5

0 1 Mile 5

ALTERNATIVE D

PROTECT RESOURCES WHILE EXPANDING INTERPRETIVE EXPERIENCE *(PREFERRED ALTERNATIVE)*

BADLANDS NATIONAL PARK

United States Department of the Interior / National Park Service

Note: The NPS recognizes private in-holdings and other valid existing rights, and the management zones shown are not intended to imply otherwise.

ver. 2011-11-02

Visitor Use and Experience

The visitor contact stations would be staffed by park personnel. Seasonal operations would be expanded. The NPS would continue to design the exhibits, with OST input. In the preferred alternative (alternative D), interpretive opportunities would be offered to visitors in a variety of new ways:

- Emphasis on the preservation of Lakota language and culture through a variety of education and interpretation programs, such as family history and living history, monuments that memorialize events in Lakota history, and wayside exhibits that emphasize native background and history would occur. Exhibits at the visitor contact station and the LHEC would include information about Oglala Sioux history and culture. A living history village would be created. Visitors would be able to explore the history and culture, resources, and traditional land management of the area through tours led by Tribal members. Additionally, there would be opportunities for visitors to see and purchase Oglala arts and crafts. Audio tours might be available. Bilingual (English and Lakota) signs would be used on roads, in interpretive displays, and elsewhere.
- Historic and cultural discovery would occur at activities such as powwows and ceremonies. At some cultural or ceremonial sites, as well as at campgrounds, interpretive activities would be presented so visitors could learn more about the Lakota culture and history. Programs would feature Tribal members who wear and explain traditional dress, and story-telling and oral history would be presented by Tribal elders.
- Within this zone, visitors would experience a highly controlled environment, with opportunities to access and view an active research quarry. Development would be temporary and done to support paleontological research and provide for visitor health and safety. Visitors would have the opportunity to gain understanding about the value of research and the process of caring for paleontological resources.
- Interpretive signs would be placed along roads to identify locations, animals and plants, historic locations, and mileages.
- Interpretation and orientation information would also be available at the LHEC.

Visitor Access and Enjoyment

Alternative D envisions a visitor contact station at White River. Another visitor contact station would be constructed on the west side along the perimeter, where practicable. Staff housing at the White River Complex would be expanded and improved to accommodate the increase in staff. One, possibly two, entrance stations would be developed.

The LHEC would include a museum for artifacts, fossil resources, and natural history specimens. Development of the LHEC would continue as funding permits. For more details concerning the LHEC, refer to the “Elements Common to All Action Alternatives” section in this chapter.

Recreational opportunities would be available through guided hikes, and unpaved hiking trails and campsites would be established along the perimeter of the South Unit. Hiking would be allowed on some primitive trails in the Natural Area / Recreation Zone. Some developed campsites would be available around the perimeter. Backcountry camping would be allowed in designated interior areas by permit. Park management would institute a permit and reservation system for unguided access into the interior; guided access would also be allowed.

Along the perimeter of the park, there would be arts and crafts outlets, powwow grounds, modern equestrian grounds, and visitor amenities accessible by vehicle. Visitors could explore the South Unit at dispersed visitor

access points along the perimeter. These visitor access points would have trails, trailheads, parking areas, rest areas with comfort stations, overlooks, and wayside exhibits. In other areas visitors could access the perimeter where there is less development. There would be an improved road to the quarry area (Research Zone), which would feature parking, restrooms, trailheads, and campsites. Two-track unimproved roads in the interior would be used for administrative access only. The interior would not have visitor facilities, and there would not be any improved or maintained roads for visitor use other than the road to the quarry.

Guided trail tours would take visitors to select areas in the interior. Where bike lanes could be safely provided, bicycling along the roads in developed zones would be encouraged.

Unguided access to ceremonial and other cultural sites of the South Unit may be restricted at certain times; interpretation of these areas would be provided primarily by guides. There would be off-site interpretation of cultural and sacred sites. Pristine areas would be set aside for limited access through guided tours only. Visitor participation at scientific activity sites, such as paleontological digs, would be controlled.

A backcountry ranger patrol station with equine facilities would be developed in the interior, most likely on the west side.

To limit the impacts on the natural environment, development and visitor activities would be restricted mostly to the perimeter of the South Unit. The existing two-track roads would continue to provide access to the South Unit and would be improved along the perimeter as needed to provide access to the amenities there. Minimal development would accommodate primitive camping in the Natural Area / Recreation Zone.

Staffing and Cost

Full staffing levels under this alternative would reach 26 FTEs under full implementation at a cost of approximately $1.8 million per year.

The management divisions and staffing needs for each are as follows:

Volunteers, a key component of a park manager's ability to protect resources and provide high quality visitor services, would be encouraged. If funding and staffing for some elements of this alternative were substantially reduced or should become unavailable from federal sources, park managers would consider other options, such as expanding the park volunteer program or developing partnerships with other agencies, organizations, businesses, and/or the OST, to accomplish these elements.

One-time facility needs and costs for this alternative are estimated at approximately $21.8 million. Refer to appendix D for a comparison of one-time facility costs related to each alternative.

The $21.8 million includes facility costs (e.g., trails, roads, entrance and visitor contact stations, campgrounds). The plans, supporting surveys, and program activities identified for resource management in alternative B are the same under this alternative. The total non-facility cost would be approximately $2.2 – 2.95 million.

ELEMENTS COMMON TO ALL ALTERNATIVES

The following summary describes the single element that would be common to all alternatives.

Facilities and Development

Regardless of the alternative selected, the LHEC would be built whenever funding becomes available. Development of the LHEC would continue as funding permits. A museum with curatorial facilities to house, display, and protect fossils and artifacts would be a component of the LHEC. Those elements of the alternatives applicable to the LHEC would be implemented once the facility is fully operational. Because the construction of the LHEC is Congressionally authorized, but not funded, based on Public Law 90-463, the requirement applies to all alternatives, including the No-Action

Alternative. The LHEC is currently planned to be developed outside the park boundary (see map of any alternative in this section).

Boundary Adjustments

No boundary adjustments are contemplated in any of the alternatives.

ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

The following summary describes elements that are common to all action alternatives.

Resource Management

Bison fencing would be provided where necessary.

Visitor Use and Experience

Guided tours that include interpretation of natural resources would be provided.

Interpretation of the Bombing Range would be provided.

Visitor Access and Enjoyment

Wells and cisterns would be provided at campgrounds.

Facilities and Development

Appropriate administrative and visitor access by horse or vehicle would be allowed on roads and two tracks as specified by management throughout the South Unit. Off-road vehicle access would only be permitted through a documented management decision process.

Contact stations to provide orientation and information would be developed in appropriate locations on the east or west side of the South Unit. An entrance station and a contact station could be co-located. Until the LHEC is developed, the White River Visitor Center would be the primary visitor center in the park. The function of the White River Visitor Center would change to reflect operational needs. To facilitate the collection of fees, one or more entrance stations could be developed.

Operations

An asset management program would be developed and implemented. Facilities would be identified and deficiencies would be corrected. Facilities maintenance and facilities operations would be executed.

The need for commercial services would be evaluated to determine first whether they are necessary and appropriate and then whether they represent an economically feasible operation.

The main roads in the South Unit would be improved. If congestion in the South Unit begins to approach an unacceptable level, the park would look at alternatives for resolving the issue. This could involve expanding existing facilities, constructing new ones, and exploring mass transportation systems with on-board interpretive programs.

Removal of unexploded ordnance at the Bombing Range would continue.

Patrols to protect against theft of cultural and paleontological resources would increase.

The range survey currently underway on Range Unit 505 to determine management needs would continue until complete.

MITIGATION MEASURES

The following mitigation measures would be used to avoid or minimize potential impacts on natural and cultural resources from construction activities, use by visitors, and park operations. These measures would apply to all alternatives.

Natural Resources

Air Quality

The best available clean fuel technology and exhaust equipment would be applied (as it becomes available) to construction equipment to the extent feasible.

A dust abatement program would be used, including watering or otherwise stabilizing soils,

covering haul trucks, employing speed limits on unpaved roads, minimizing vegetation clearing, and promptly revegetating after the completion of construction.

Water Quality

Best management practices such as the use of silt fences would be followed to ensure that construction-related effects were minimal and to prevent long-term impacts on water quality, wetlands, and aquatic species.

The park's spill prevention and pollution program for hazardous materials would be used and would be updated on a regular basis. Standard measures could include storage and handling procedures for hazardous materials; containment, cleanup, and reporting procedures for spills; and limiting refueling and other hazardous activities to upland/nonsensitive sites.

Any new facilities would be built to avoid water resources, including wetlands, drainages, and riparian areas. Any new structures would be placed outside of floodplains.

Soils and Vegetation

Roadside mowing would be timed to help prevent the spread of noxious weeds.

Efforts to prevent soil loss would be undertaken, as appropriate, for all excavation, grading, construction, and other soil disturbing activities. These actions could include the following:

- Covering or seeding disturbed areas.
- Imposing speed limits for construction vehicles in unpaved areas.
- Covering trucks hauling dirt and debris.
- Salvaging and reusing native soils.

Work on campsites, roads, and other facilities in and outside the park would continue to be planned to reduce impacts on vegetation. Site-specific surveys would identify areas to be avoided because of terrain or resource concerns. Proposed locations for picnic sites or campsites would be surveyed for possible special-status plant species, and such sites would be designed and maintained to discourage the development of social trails.

Revegetation plans would be developed for areas affected by major construction activities. The use of native plant species would continue to be required, as would the salvage of plants and topsoils. Revegetation plans would continue to specify such features as seed and plant sources, seed mixes, soil preparation, fertilizers, and mulching. As much as possible, salvaged vegetation would be used rather than new planting or seeding.

To maintain genetic integrity, an attempt would be made to restore vegetation by using seed of native genotypes collected in the Northern Great Plains. Consideration would be given to using plant material propagated from seeds or plant stock collected in the project area. The use of nonnative species or genetic materials would be considered only where deemed necessary to maintain a cultural landscape or to prevent severe resource damage. Any such use would be approved by the park's resource management personnel.

Restoration activities would be instituted immediately after construction was completed. Monitoring would be carried out to ensure that revegetation would be successful, plantings would be maintained, and unsuccessful plant materials would be replaced.

Wildlife

To the extent possible, new or rehabilitated facilities would be sited to avoid sensitive wildlife habitats such as major wildlife travel areas or corridors, feeding and resting areas, or nesting areas.

Construction activities would be timed to avoid sensitive periods such as nesting or calving seasons. Ongoing use by visitors or park operations could be restricted if their potential to cause damage or disturbance warranted doing so.

Measures would be taken to reduce the potential for wildlife to obtain food from humans. The park would continue to educate visitors about the need to refrain from feeding wildlife. Signs with this information would be attached to picnic tables and posted on kiosks in campgrounds and picnic areas.

Special-status Species

Park staff would conduct surveys for special-status species before taking any action that might cause harm. In consultation with the U.S. Fish and Wildlife Service and the state of South Dakota, the NPS would take measures to protect any sensitive species, whether they were identified through surveys or presumed to be present.

Paleontological Resources

All ground-disturbing undertakings would be assessed for the presence of paleontological resources, and surveys would be conducted before the selected alternative was implemented. During construction in areas considered to have potential for undisturbed resources, monitoring would be conducted to ensure that sites would be avoided and to evaluate uncovered resources. If paleontological resources were identified and could not be avoided by project redesign, data recovery excavations would be completed before construction.

If unknown paleontological resources were discovered during construction, work in that location would be stopped until the resources were properly recorded and evaluated. Measures would be taken to avoid further resource impacts or to mitigate their loss or disturbance.

Because of the continued loss of resources from illegal collecting, park management would increase its efforts to protect fossil resources. These efforts would include increased emphasis on interpretive messages about the fossils and more signs advising visitors that fossil collecting is illegal. It is expected that these efforts would reduce illegal collection by park visitors. In addition, NPS law enforcement efforts would be increased to reduce poaching of fossils for commercial interests.

Cultural Resources

In consultation with the Tribal Historic Preservation Officer, Tribal officials, the Advisory Council on Historic Preservation, and other interested parties, under all the alternatives the park staff would continue to apply the following measures to avoid or minimize impacts on historic properties, archeological resources, and ethnographic resources.

All ground-disturbing undertakings would be assessed for the presence of archeological resources, and intensive ground surveys would precede any and all ground-disturbing activities. To ensure that sites would be avoided and to evaluate undiscovered resources, archeological monitoring would be continued during construction in areas considered to have potential for undisturbed resources. If archeological resources were identified and could not be avoided by project redesign, mitigation measures developed in consultation with the Tribal Historic Preservation Office would be completed before construction.

In compliance with the statute and all regulations of the *Native American Graves Protection and Repatriation Act* of 1990, and following the provisions specified in the regulations, the park superintendent would notify all potentially culturally affiliated Tribes upon the discovery of American Indian human remains, funerary objects, sacred objects, or objects of cultural patrimony. The park manager would consult with the federally recognized Tribes that are potentially affiliated, either through the Tribal governments or their duly designated representatives. All decisions regarding the disposition and/or treatment of American Indian human remains, funerary objects, sacred objects, or objects of cultural patrimony would be made in full compliance with the *Native American Graves Protection and Repatriation Act* statute and regulations.

Park management would consult Tribal officials before taking actions that could affect ethnographic resources. Park management would abide by existing cooperative agreements and would pursue additional agreements with culturally affiliated Tribes to avoid resource impacts, allow access for traditional gatherings and other approved activities, and minimize potential use conflicts in culturally sensitive areas. The park would develop and accomplish its programs in a manner respectful of the beliefs, traditions, and other cultural values of the OST.

Other possible mitigation measures would be developed and implemented as necessary in consultation with the Tribal Historic Preservation Office, the Advisory Council on Historic Preservation, Tribal officials, and other interested parties.

ALTERNATIVES CONSIDERED BUT DISMISSED

In February 2010, prior to the identification of a preferred alternative, a value-analysis decision-making process, “Choosing by Advantages” (CBA), was undertaken. An interdisciplinary team debated and considered the advantages of each alternative, public input, probable environmental consequences, and costs of the alternatives. The CBA process led to the development of the Preferred Alternative. As a result of developing the preferred alternative through the CBA process, alternative D was modified to incorporate the advantages from each of the other alternatives. The other alternatives were changed slightly to capture the full breadth of ideas brought to the preliminary alternatives by the public.

The development of alternative transportation into and out of the South Unit was discussed throughout the planning process. Given the existing state of development and management, it was decided that planning for alternative transportation would be premature at this time.

THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS is required to identify the environmentally preferable alternative in its environmental impact analysis documents for public review and comment. The NPS, in accordance with the Department of the Interior policies contained in the *Department Manual* (516 DM 4.10) and the *Council on Environmental Quality's Forty Questions*, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in the *National Environmental Policy Act* (NEPA) (Section 101(b)).

Section 101 states that it is the continuing responsibility of the federal government to

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Ensure safe, healthful, productive, and esthetically and culturally pleasing surroundings for all Americans;
3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and a variety of individual choices;
5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

A description of how each alternative would or would not achieve the requirements of sections 101 and 102(1) of NEPA is shown in table 3.

The No-Action Alternative (alternative A) represents the status quo, or current management. Alternative A partially meets criterion 1 in that the South Unit is managed as a relatively large, remote natural area. However, management of the site to protect natural and cultural resources is occurring on an as-needed basis rather than providing active management of the area (criterion 4). Alternative A does not provide the range of diversity and individual choices for visitor experience and/or natural and cultural resources management that the action alternatives do (criterion 3). It does not provide for safe, healthful, productive, and aesthetically and culturally pleasing surroundings to the degree the action alternatives do (criterion 2). Alternative A does not fully meet criteria 3, 4, and 5 to the same extent as the action alternatives because it has fewer recreational opportunities and does not afford the same level of active resource and visitor use management.

Alternative B proposes managing the majority of the South Unit as Natural Area / Recreation Zone, with a designated Development Zone on the perimeter and a Research Zone surrounding an active paleontological quarry. Alternative B provides recreational opportunities, preservation of resources, and active resource management, fully meeting criteria 1, 2, and 3. However, alternative B does not afford the same focus on the cultural resources of the South Unit, specifically the heritage and culture of the Lakota. Therefore, alternative B only partially meets criteria 4 and 5.

Alternative C realizes criterion 1, designating a majority of the park as Preservation Zone and discouraging visitor access to the interior of the South Unit, thus providing limited new recreational opportunities, while still promoting expanded opportunities for visitors to experience Lakota culture and history. Therefore, alternative C fully meets criteria 1, 2, and 4 and partially meets criteria 3 and 5.

Alternative D, the preferred alternative, proposes managing the South Unit as Natural Area / Recreation Zone, with a designated Development Zone on the perimeter and a Research Zone surrounding an active paleontological quarry (like alternative B). Also

like alternative B, alternative D provides recreational opportunities, preservation of resources, and active resource management and thus fully meets criteria 1, 2, and 3. Alternative D also focuses on the cultural resources of the South Unit, specifically the heritage and culture of the Lakota, providing for preservation of both the natural and historic resources of the South Unit, fully meeting criteria 4 and 5. Therefore, alternative D is the environmentally preferable alternative

TABLE 3. COMPARISON OF ALTERNATIVES REGARDING NEPA CRITERIA

Criterion	Alternative A (No Action)	Alternative B	Alternative C	Alternative D (Preferred Alternative)
Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations	Partially meets criterion	Fully meets criterion	Fully meets criterion	Fully meets criterion
Ensure safe, healthful, productive, and aesthetically and culturally pleasing surroundings for all Americans	Partially meets criterion	Fully meets criterion	Fully meets criterion	Fully meets criterion
Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences	Does not meet criterion	Fully meets criterion	Partially meets criterion	Fully meets criterion
Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and a variety of individual choices	Partially meets criterion	Partially meets criterion	Fully meets criterion	Fully meets criterion
Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities	Does not meet criterion	Partially meets criterion	Partially meets criterion	Fully meets criterion
Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources	Meets criterion	Meets criterion	Meets criterion	Meets criterion
Conclusion:				**Environmentally preferable alternative**

SELECTING THE PREFERRED ALTERNATIVE

The development of the preferred alternative involved evaluating the alternatives through the use of an objective analysis process called CBA. Through this process, the team identified and compared the relative advantage of each alternative according to a set of factors. The benefits or advantages of each alternative are compared for each of the following CBA factors:

- Prevent loss, maintain, and improve conditions of natural and cultural resources.
- Preserve Oglala Sioux tribal resources, traditions, culture, and heritage.
- Direct resource interpretation and education to improve visitor experience.

Each alternative was rated based on a scoring system that evaluated how well each alternative achieved the purpose of each factors identified above. After selecting the preferred alternative, the team also evaluated the preferred alternative based on the following factors:

- Were the needs and preferences of the public and stakeholders considered?
- How well did the preferred alternative answer the issues identified during scoping?
- Is the preferred alternative cost conscious and how would the park save budgeted funds?
- Would adding or revising attributes or high-cost items strengthen the preferred alternative?
- Is the preferred alternative consistent with the park's purpose and significance?
- Should the importance values be adjusted?

The final outcome of the CBA process concluded that the alternative selected as the preferred alternative (alternative D) would give the NPS and the OST the greatest overall benefits for each point listed above for the most reasonable cost. A comparison of alternatives is shown in table 4, and environmental consequences are compared in table 5.

TABLE 4. COMPARISON OF ALTERNATIVES

Management Elements	Alternative A: No Action (Continue Current Management)	Alternative B: Expand Interpretive Opportunities	Alternative C: Focus on Resource Protection/Preservation	Alternative D: Protect Resources while Expanding Interpretive Experience (Preferred Alternative)
Concept				
	Current management would continue. Operations, visitor opportunities, and resources would continue as currently managed. MANAGEMENT ZONES: None.	Restoration programs would be developed with the goal of managing natural conditions in areas not grazed. Native species would be reintroduced in some areas. Natural resource management would focus on surveys and research. Cultural resource management would focus on protection and preservation of historical, spiritual, and ceremonial sites. Interpretive programs focused on Oglala Sioux history and culture would be provided. Cultural and natural resource self-guided and other discovery tours in the interior and on the perimeter of the South Unit would be provided. MANAGEMENT ZONES: Natural Area / Recreation Zone, Research Zone (quarry), Development Zone along perimeter. Management would focus on restoration with expanded access and opportunities for visitors. Opportunities would include interpretation of natural, cultural, and paleontological resources.	Restoration programs would be developed with the goal of restoring natural, pre-expansion conditions, expanding into Range Unit 505. Livestock would be gradually eliminated and native species reintroduced. Natural resource management would focus on preservation and restoration. Cultural resource management would focus on protection and preservation of historical, spiritual, and ceremonial sites. Focus would be on providing a range of appropriate visitor uses on the perimeter of the South Unit. MANAGEMENT ZONES: Natural Area / Recreation Zone, Preservation Zone, Development Zone. Management would focus on preservation, protection, and restoration of natural and cultural resources. Access would be limited primarily to the perimeter.	Restoration programs would be developed with the goal of managing and restoring natural, pre-expansion conditions in areas not grazed, using indigenous stewardship methods and models. Natural resource management would focus on surveys and research. Cultural resource management would focus on protection and preservation of historical, spiritual, and ceremonial sites. Interpretive programs focused on Oglala Sioux history and culture would be provided. Cultural and natural resource guided tours in the interior and self-guided tours on the perimeter of the South Unit would be provided. MANAGEMENT ZONES: Natural Area / Recreation Zone, Research Zone (quarry), Development Zone. Management would focus on restoration with expanded access and opportunities for visitors. Opportunities would include interpretation of natural, cultural, and paleontological resources.
Biological Resources Management Elements				
Vegetation management	No active management; restoration programs initiated as necessary.	Exotic plant species would be managed using integrated weed management strategies; disturbed sites would be revegetated with native plants.	Same as alternative B, plus would actively seek to reintroduce and/or enhance native and culturally significant plant populations and inventory and protect rare, medicinal, and edible plants.	Same as alternative C.
Range management—bison	No bison reintroductions.	Bison would be reintroduced in some areas as the opportunity arises, *dependent on existing leases* (specific areas to be identified by NPS/OST concurrently with leases).	Bison would be reintroduced in Range Unit 505 and a preserve/reserve would be created. Additional reintroductions would occur as the opportunity arises, *dependent on existing leases*.	Same as alternative C.
Range management—livestock	Livestock grazing would continue; grazing leases would remain in effect.	Livestock grazing would be managed to ensure sustainability of native vegetation and gradually eliminated from Range Unit 505.	Livestock grazing would be managed to ensure sustainability of native vegetation and gradually eliminated from South Unit.	Same as alternative C.
Restoration programs	No active restoration programs; restoration programs initiated as necessary.	Restoration programs would be developed with the goal of restoring natural, pre-expansion conditions in areas not grazed, using indigenous stewardship methods and models.	Restoration programs would be developed with the goal of restoring natural, pre-expansion conditions, expanding into Range Unit 505.	Same as alternative B.
Cultural Resources Management Elements				
Interpretation—Oglala Lakota, language, history, and culture	Limited interpretation at White River Visitor Center of Oglala Sioux history and culture would be continued. No programs would explicitly emphasize Oglala Lakota language.	Interpretive programs focused on Oglala Sioux history and culture would be provided; a living history village, where Tribal members would recount their family history and Oglala Sioux history, would be developed. Cultural and natural resource self-guided and other discovery tours would be provided.	Interpretive programs focused on Oglala Sioux history and culture would be provided; a living history village, where Tribal members would recount their family history and Oglala Sioux history, would be developed. An emphasis on preservation of Lakota language and culture would be developed through a variety of education and interpretation programs.	Same as alternative C.

TABLE 4. COMPARISON OF ALTERNATIVES

Management Elements	Alternative A: No Action (Continue Current Management)	Alternative B: Expand Interpretive Opportunities	Alternative C: Focus on Resource Protection/Preservation	Alternative D: Protect Resources while Expanding Interpretive Experience (Preferred Alternative)
Paleontological Resources Management Elements				
Quarries	No operating quarries in South Unit.	One active quarry would be opened for visitor viewing; paleontology digs would be monitored by trained park personnel, consistent with Tribal policies.	Same as alternative A.	Same as alternative B.
Collection storage	Fossil collections would continue to be housed in off-site repositories, such as the South Dakota School of Mines and Technology.	Existing fossil collection would continue to be housed in off-site repositories, such as the South Dakota School of Mines and Technology; fossils collected from quarry operation and surveys would be prepared and curated by trained park personnel and housed off site until the LHEC museum is fully operational.	When feasible, existing known fossil collections acquired from the South Unit would be located, returned, and housed at the LHEC museum, once operational. Fossils collected from quarry operation and surveys would be prepared and curated by trained park personnel and housed off site until the LHEC museum is fully operational.	Known fossil collections would be identified and additional collections would be investigated, and, where feasible, returned and housed at the LHEC museum, once operational. Fossils collected from quarry operation and surveys would be prepared and curated by trained park personnel and housed off site until the LHEC museum is fully operational.
Visitor Use and Experience Management Elements				
Interpretation—cultural/ceremonial sites	No interpretation of cultural or ceremonial sites.	Interpretive opportunities would be provided at some cultural and ceremonial sites. Visitation/access at sacred and/or ceremonial sites would be controlled.	Interpretive opportunities of cultural and ceremonial sites would be provided at the LHEC, once fully operational.	Same as alternative C.
Interpretation—exhibits/visitor contact	No change in the number of exhibits or interpretive staff at the White River Visitor Center would occur; no additional visitor center/contact stations would be developed in South Unit.	White River Visitor Center exhibits would be improved and possibly expanded; additional visitor contact center (location to be determined) would be developed.	White River Visitor Center exhibits would be improved and exhibits providing biological and ecological interpretation and exhibits about Oglala Sioux history and culture developed.	Same as alternative B.
Visitor Access and Enjoyment Elements				
Visitor access	No restrictions on visitor access. Guides would not be available. Fences on leased lands would remain in place.	Visitor access in cultural, sacred, and ceremonial sites would be controlled.	Visitor access would be limited to certain areas of the interior of South Unit.	Same as alternative B.
Interior	Access to interior would continue via paths or two-track unimproved roads.	Visitor access in interior would be limited to an improved road to quarry area with parking, restrooms, trailheads, and campsites (added at quarry) and guided tours.	Visitor access in interior would be limited to guided tours and primitive camping/hiking. No improved road.	Visitor access to interior would be limited to an improved road to quarry area with parking, restrooms, trailheads, and campsites (added at quarry). Administrative access to interior would be allowed on two-track, unimproved roads.
Perimeter	Access around perimeter would continue via existing two-track unimproved roads	Developed perimeter access would be focused in one location (White River Visitor Center); facilities would include parking, restrooms, trailheads, and overlooks. Dispersed visitor access points would be developed.	Developed perimeter access would be concentrated in one location (Natural Area / Recreation Zone); facilities would include parking, restrooms, trailheads, and overlooks.	Developed perimeter access would be concentrated in one location (Development Zone); facilities would include parking, restrooms, trailheads, and overlooks.
Trails	No designated hiking or riding trails would be provided.	Hiking and horseback-riding trails would be developed along perimeter and into interior.	Unpaved hiking and horseback riding trails would be developed in the Natural Area / Recreation Zone.	Unpaved hiking and horseback riding trails would be developed in some areas in the interior.
Backcountry access	Backcountry access would not be regulated; no guide services and no interpretation would be available in the interior.	Backcountry access would be provided via developed trails, with Oglala guides to interpret history of area, Oglala culture, resources, traditional Lakota land management, etc.	Backcountry access would be restricted; no developed trails would be provided; some guided tours to select areas in the interior would be available.	Backcountry access would be provided via developed trails for hiking, riding, and backpacking; some guided tours to select areas in the interior would be available.
Camping—primitive	No primitive campsites and no backcountry camping opportunities would be available.	Unguided primitive camping for individuals and limited overnight backpacking would be provided.	Unguided primitive camping would be provided in designated areas on the perimeter, and by permit in the interior.	Unguided primitive camping for individuals and limited overnight backpacking would be provided by permit.
Camping—developed	No developed campsites currently exist.	Developed camping area(s) with amenities would be provided on the perimeter and on guided camping trips.	Same as alternative A.	Same as alternative B.
Wayside exhibits	No wayside exhibits available.	Wayside exhibits would be provided focused in one location, and dispersed along the perimeter.	Wayside exhibits would be provided in three areas (White River Visitor Center, contact station, and perimeter).	Wayside exhibits would be provided at multiple sites along the perimeter.

TABLE 4. COMPARISON OF ALTERNATIVES

Management Elements	Alternative A: No Action (Continue Current Management)	Alternative B: Expand Interpretive Opportunities	Alternative C: Focus on Resource Protection/Preservation	Alternative D: Protect Resources while Expanding Interpretive Experience (Preferred Alternative)
Facilities and Development Management Elements				
Visitor contact stations	Existing operations would continue and visitor facilities would remain concentrated at White River.	Entrance station and visitor contact stations (locations to be determined) would be developed within the Development Zone in the White River / Rocky Ford area and along most of the southern and western edge of the South Unit.	Entrance station would be developed in the Development Zone on east side in White River/Rocky Ford area; the White River Visitor Center would be expanded to hold more exhibits and accommodate increased staff; maintenance facility would be developed.	Two entrance stations (west and north side of Unit) would be developed; the White River Visitor Center would be redeveloped as a visitor contact station (until the LHEC is available); one new contact station would be developed.
Interior roads	No improved interior roads.	Existing road to quarry would be improved.	Same as alternative A.	Same as alternative B.
Operations Elements				
Staffing	Staff levels would remain at two seasonal Tribal members or law enforcement; two law enforcement rangers; one full-time park staff member in park housing anticipated; vacancies will be filled as funding permits. 2 FTEs; annual cost = $183,000	Interpretive and museum staff, law enforcement staff, and maintenance staff would increase. 25 FTEs; annual cost = $1.7 million	21 FTEs; annual cost = $1.6 million	26 FTEs; annual cost = $1.8 million

TABLE 5. COMPARISON OF ENVIRONMENTAL CONSEQUENCES

Impact Topic	Alternative A: No Action (Continue Current Management)	Alternative B: Expand Interpretive Opportunities	Alternative C: Focus on Resource Protection/Preservation	Alternative D: Protect Resources while Expanding Interpretive Experience (Preferred Alternative)
Vegetation	Alternative A would have minor to moderate long-term adverse effects on vegetation due to grazing and visitor activities. The impacts of other past, present, and anticipated projects combined with alternative A would likely result in long-term negligible to moderate adverse impacts to vegetation.	Alternative B would have short- to long-term negligible to moderate adverse effects on vegetation associated with the development or improvement facilities and visitor services. The impacts of other past, present, and anticipated projects combined with alternative B would likely result in long-term minor adverse impacts to vegetation. However, the actions under alternative B would add a minimal increment to this cumulative impact.	Alternative C would have short- to long-term adverse and beneficial effects on vegetation resulting in negligible to moderate adverse effects on vegetation associated with the development or improvement facilities and visitor services. The impacts of other past, present, and anticipated projects combined with alternative C would likely result in long-term cumulative minor adverse effects on the park's vegetation. However, the actions under alternative C would add a minimal increment to this cumulative impact.	Same as alternative C.
Wildlife	Negligible to minor short-term adverse effects on wildlife populations would continue under alternative A in local areas from the presence of visitors and staff. Minor long-term adverse cumulative effects would be expected on wildlife populations at the South Unit.	Alternative B would have short- and long-term minor to moderate adverse impacts on wildlife, as well as short- and long-term beneficial impacts. The impacts of other past, present, and anticipated projects combined with alternative B would likely result in long-term minor adverse impacts.	Same as alternative B.	Same as alternative B.
Paleontological Resources	Alternative A would have the potential to result in continued moderate long-term adverse effects on paleontological resources. This would be caused primarily by the continued illegal removal of fossils from the South Unit by visitors and collectors, continued livestock trampling of fossils, and continued weathering and mass wasting (landslides). Added to this, other actions in and outside of the park could result in a long-term cumulative moderate beneficial impact. Most impacts to fossil resources outside of the South Unit are being addressed and mitigated through actions such as law enforcement, inventory of planned projects, and collection for study and preservation. Long-term moderate adverse effects would be anticipated on paleontological resources under alternative A. Despite the loss of some fossil resources, the NPS would not be prevented from fulfilling the purposes for which Badlands National Park was established. The loss of resources would not destroy the integrity of the park relative to paleontological resources— fossils would continue to be present throughout the park, and the park staff would continue to protect paleontological resources. People still could come to the South Unit and enjoy its values, including its fossils.	Alternative B would have the potential to result in beneficial effects on paleontological resources. This would be caused primarily by an expected reduction in illegal removal of fossils from the South Unit by visitors and collectors. Continued livestock trampling of fossils and continued weathering and mass wasting (landslides) would have an adverse impact; however, these impacts could be mitigated by continuing efforts to educate visitors about fossils, efforts to allocate existing law enforcement resources toward fossil protection, and inventories to locate and salvage fossils. The effects on paleontological resources under alternative B are anticipated to be beneficial. Illegal fossil collecting should decrease from increased law enforcement, public education, and increased inventory. Any loss of fossils would not destroy the integrity of the park relative to paleontological resources — fossils would continue to be present throughout the park, and the park staff would continue to protect, interpret, and provide opportunities for scientific research on paleontological resources. People could come to the South Unit and enjoy its values, including its fossils.	Alternative C would have potential beneficial effects on paleontological resources. This would be caused primarily by an expected reduction in illegal removal of fossils from the South Unit by visitors and collectors and reduced livestock trampling of fossils. However, the reintroduction of bison could have an adverse impact through increased trampling of fossils. Impacts could be mitigated by continuing efforts to educate visitors about fossils, efforts to allocate existing law enforcement resources toward fossil protection, inventories to locate and protect fossils, and availability of professional personnel. Added to this, other actions in and outside of the park could result in a cumulative beneficial impact. Most impacts to fossil resources outside of the South Unit are being addressed and mitigated through actions such as law enforcement, inventory of planned projects, and collection for study and preservation. The effects on paleontological resources under alternative C are anticipated to be beneficial. Illegal fossil collecting should decrease from increased law enforcement, and increased inventory. Any loss of fossils, reduced from current levels would not destroy the integrity of the park relative to paleontological resources— fossils would continue to be present throughout the park, and the park staff would continue to protect, interpret, and provide opportunities for scientific research on paleontological resources. People still could come to the South Unit and enjoy its values, including its fossils.	Alternative D would produce beneficial effects on paleontological resources. There would be an expected reduction in illegal removal of fossils from the South Unit by visitors and collectors, reduced livestock trampling of fossils, and continued weathering and mass wasting (landslides). These impacts could be mitigated by continuing efforts to educate visitors about fossils, efforts to allocate existing law enforcement resources towards fossil protection, inventories to locate and protect fossils, and availability of professional personnel. Added to this, other actions in and outside of the park could result in a long-term cumulative moderate beneficial impact. Most impacts to fossil resources outside of the South Unit are being addressed and mitigated through actions such as law enforcement, inventory of planned projects, and collection for study and preservation. The effects on paleontological resources under alternative D are anticipated to have a major beneficial effect. Illegal fossil collecting should decrease from increased law enforcement, and increased inventory. Any loss of fossils, reduced from current levels, not destroy the integrity of the park relative to paleontological resources— fossils would continue to be present throughout the park, and the park staff would continue to protect, interpret, and provide opportunities for scientific research on paleontological resources. People still could come to the South Unit and enjoy its values, including its fossils. The interpretive focus would be on the Lakota oral history view of these important resources.

TABLE 5. COMPARISON OF ENVIRONMENTAL CONSEQUENCES

Impact Topic	Alternative A: No Action (Continue Current Management)	Alternative B: Expand Interpretive Opportunities	Alternative C: Focus on Resource Protection/Preservation	Alternative D: Protect Resources while Expanding Interpretive Experience (Preferred Alternative)
Soundscapes	Most of the South Unit would continue to be relatively quiet under alternative A. However, there would continue to be long-term negligible to minor adverse effects on the park's soundscape in local areas, largely from visitation and administrative activities under developed areas. Noise from activities in alternative A added to noise from other actions within and outside the South Unit could result in short-and long-term, negligible to minor adverse cumulative effects in local areas.	Due to construction activities proposed under alternative B, the soundscapes within the South Unit would likely change substantially in the short-term. However, in areas not identified as areas for future construction, there would continue to be long-term negligible to minor adverse effects on the park's soundscape in local areas, largely from visitation and administrative activities in developed areas. Noise from activities under alternative B added to noise from other actions within and outside the South Unit could result in short-and long-term, minor to moderate adverse cumulative effects in local areas.	Same as alternative B.	Same as alternative B.
Archeological Sites	Alternative A would have the potential to result in continued minor to moderate short to long-term adverse effects on archeological resources. This would be caused primarily by the continued illegal removal of cultural resources from the South Unit by visitors and collectors, continued livestock trampling, and continued weathering and mass wasting (landslides). These impacts could be mitigated by continuing efforts to educate visitors about archeological sites and efforts to allocate existing law enforcement resources towards fossil protection. Added to this, other actions in and outside of the park could result in a cumulative beneficial impact. Most impacts to cultural resources outside of the South Unit are being addressed and mitigated through actions such as law enforcement, inventory of planned projects, and collection for study and preservation. The effects on archeological resources under alternative A are anticipated to be moderately adverse. For Section 106 purposes, the determination would be *adverse effect*.	Alternative B would have the potential to result in beneficial effects on archeological resources within the South Unit. This would be caused primarily by the reduced illegal removal of archeological resources from the South Unit by visitors and collectors and increases in public education opportunities and inventories. The increased knowledge about the resource base would improve the ability of the park to manage the resources, as well as improve project planning and decision making. Impacts related to continued livestock trampling and continued weathering and mass wasting (landslides) would be long-term and moderate. Increased inventory would result in beneficial effects. For Section 106 purposes, this would constitute an adverse effect. Other actions in and outside of the South Unit could result in an overall, cumulative beneficial impact. Most impacts to cultural resources outside of the South Unit are being addressed and mitigated through actions such as law enforcement, inventory of planned projects, and collection for study and preservation.	Alternative C would result in beneficial effects on archeological resources. This would be caused primarily by an expected reduction in illegal removal of archeological materials from the South Unit by visitors and collectors and reduced livestock trampling. Impacts related to continued weathering and mass wasting could be mitigated by continuing efforts to educate visitors about archeological resources, efforts to allocate existing law enforcement resources towards resource protection, and inventories to locate and protect archeological sites. Added to this, other actions in and outside of the park could result in a beneficial impact. Most impacts to archeological resources outside of the South Unit would generally be addressed and mitigated through actions such as law enforcement, inventory of planned projects, and collection for study and preservation. The effects on archeological resources under alternative C are anticipated to be beneficial. Illegal collecting should decrease due to increased law enforcement and increased inventory. Losses of archeological materials should be reduced considerably, and increasingly limited to losses through natural processes. Park staff would continue to protect, interpret, and provide opportunities for scientific research on archeological resources. For the purposes of Section 106, the determination of effect would be *no adverse effect*.	Alternative D would have the potential to result in beneficial effects on archeological resources. There would be an expected reduction in illegal removal of archeological resources from the South Unit by visitors and collectors and reduced livestock trampling. The increased knowledge about the resource base would improve the ability of the park to manage the resources, as well as improve project planning and decision making. Impacts resulting from continued weathering and mass wasting could be mitigated by continuing efforts to educate visitors, efforts to allocate existing law enforcement resources toward protection, and inventories to locate and protect archeological sites. Added to this, other actions in and outside of the park could result in a beneficial impact. Most impacts to archeological resources outside of the South Unit are being addressed and mitigated through actions such as law enforcement, inventory of planned projects, and collection for study and preservation. The effects on archeological resources under alternative D are anticipated to have a beneficial effect. Illegal collecting should decrease from increased law enforcement, and increased inventory. Losses of archeological materials should be reduced considerably, and increasingly limited to losses through natural processes only. Park staff would continue to protect, interpret, and provide opportunities for scientific research on archeological resources. People still could come to the South Unit and enjoy its values, including its archeology. The interpretive focus would be on the Lakota oral history view of these important resources. For the purposes of Section 106, there would be no adverse effects.
Museum Collections	Items in the collections would continue to be stored and maintained, with some facilities meeting NPS museum storage standards. There would be no long-term overall impact on the preservation and usefulness of the collections. Accessibility to the collection by researchers and the public would remain unchanged.	Items in the collections would continue to be stored and maintained, with some facilities meeting NPS museum storage standards. It is assumed for this study that the LHEC would be able to house known collections from the South Unit, but the volume of materials coming from private and other repositories may overcome storage facilities. There would be a long-term minor adverse impact on the overall preservation and usefulness of the collections. Accessibility to the collection by researchers and the public would be increased.	Items in the collections would continue to be stored and maintained, with some facilities meeting NPS museum storage standards. It is assumed for this study that the LHEC would be able to house known collections from the South Unit. There would be a long-term minor adverse impact on the overall preservation and usefulness of the collections. Accessibility to the collection by researchers and the public would be increased.	Same as alternative B.

TABLE 5. COMPARISON OF ENVIRONMENTAL CONSEQUENCES

Impact Topic	Alternative A: No Action (Continue Current Management)	Alternative B: Expand Interpretive Opportunities	Alternative C: Focus on Resource Protection/Preservation	Alternative D: Protect Resources while Expanding Interpretive Experience (Preferred Alternative)
Ethnographic Resources	Alternative A would have the potential to result in long-term moderate adverse impacts on ethnographic resources due to continuing current management and access. Added to this, other actions in and outside of the park could result in a beneficial impact as well as the DM&E project's potential long term moderate to major adverse effects. Most impacts to ethnographic resources outside of the South Unit are being addressed and mitigated through actions such as inventory of planned projects, Tribal consultation, documentation and preservation. For Section 106 purposes, the determination would be *adverse effect*.	Alternative B would result in beneficial effects on ethnographic resources due to increased inventory and protection, and the addition of appropriate interpretation. Added to this, other actions in and outside of the park could result in a beneficial impact; and the DM&E project's potential long-term moderate to major adverse effects. Most impacts to ethnographic resources outside of the South Unit would be addressed and mitigated through actions such as inventory of planned projects, tribal consultation, documentation and preservation. For the purposes of Section 106, the determination of effect would be *no adverse effect*. Implementing alternative B would result in beneficial impacts on ethnographic resources in the South Unit. Until the completion of inventories of ethnographic resources, park managers would conduct site-specific surveys and consult as appropriate with American Indians for each development action.	Alternative C would have the potential to result in beneficial effects on ethnographic resources due to increased inventory and protection, and the addition of appropriate interpretation. Added to this, other actions in and outside of the park could result in a beneficial impact; and the DM&E project's potential long-term moderate to major adverse effects. Most impacts to ethnographic resources outside of the South Unit would be addressed and mitigated through actions such as inventory of planned projects, tribal consultation, documentation and preservation. For the purposes of Section 106, implementing alternative C would result in *no adverse effect* on ethnographic resources in the South Unit. Until the completion of inventories of ethnographic resources, park managers would conduct site-specific surveys and consult as appropriate with American Indians for each development action.	Same as alternative C.
Scenic Resources	The No-Action Alternative would have long-term, localized, minor to major, adverse impacts on scenery, but would not affect visibility or the night sky.	Alternative B would have negligible to major, short-and long-term, localized, adverse impacts on scenery, visibility, and night sky.	Same as alternative B.	Same as alternative B.
Visitor Experience – Access	Alternative A would result in long-term minor adverse impacts to visitor access.	By improving access in the South Unit, alternative B would produce a beneficial effect on visitor access. The improvement in access would come from improvement of local roads, construction of new parking lots, guided and unguided tours to the backcountry, increased camping opportunities, and improved signage on surrounding roads.	By improving access in the South Unit, alternative C would produce a beneficial effect on visitor access. The improvement in access would come from improvement of the local roads, guided tours into the backcountry, construction of new parking lots, increased camping opportunities, the development of interior pedestrian trails, and improved signage on surrounding roads. Access into the backcountry would be limited.	By improving access in the South Unit, alternative D would produce a beneficial effect on visitor access. The improvement in access would come from the construction of two new entrance stations, improvement of the local roads, guided tours into the backcountry, construction of new parking lots, increased camping opportunities, the development of interior pedestrian trails, and improved signage on surrounding roads. Access into the backcountry would be limited, and an emphasis would be placed on educational opportunities in the backcountry and on Lakota history and culture.
Visitor Experience – Availability of Information	Alternative A, the No-Action Alternative, would result in continued adverse effects on the experience for visitors to the South Unit. The current effects on the visitor experience are minor; however, if changes in visitation patterns continue, the effects could become more severe.	Alternative B would result in beneficial effects on the availability of information about the park. The increase in the number of outlets where visitors could obtain information and the dispersed locations of these outlets would substantially improve the visitor experience.	Same as alternative B.	Same as alternative B.
Visitor Experience – Range and Enjoyment of Visitor Activity	Implementing alternative A would result in long-term negligible adverse effects on visitor range and enjoyment of activities.	There would be more opportunities throughout the park and vicinity for visitors seeking to drive/sightsee, hike, camp, and/or picnic, creating beneficial effects on such visitors.	There would be slightly more opportunities throughout the park for visitors seeking to drive/sightsee, hike, camp, and/or picnic, creating beneficial effects on such visitors.	Same as alternative C.
Socioeconomics	The socioeconomic effect of operations and visitor use at the South Unit under the No-Action Alternative would be long-term, negligible, and adverse.	The socioeconomic effect of operations and visitor use at the South Unit under alternative B would be expected to have beneficial economic impacts.	Same as alternative B.	Same as alternative B.

TABLE 5. COMPARISON OF ENVIRONMENTAL CONSEQUENCES

Impact Topic	Alternative A: No Action (Continue Current Management)	Alternative B: Expand Interpretive Opportunities	Alternative C: Focus on Resource Protection/Preservation	Alternative D: Protect Resources while Expanding Interpretive Experience (Preferred Alternative)
Environmental Justice	Alternative A would result in negligible and adverse socioeconomic impacts, while resulting in minor to moderate adverse effects on wildlife resources, archeological sites, and ethnographic resources. Since the adverse impacts of these resource topics under alternative A would likely be felt and experienced by the local residents, the overwhelming portion of whom are minority and low-income populations, these people would be adversely affected by the continuing NPS management associated with the No-Action alternative.	Alternative B would result in beneficial effects on ethnographic resources and archaeology resources, and thus have generally beneficial impacts to American Indian populations.	Same as alternative B.	Same as alternative B.
Park Operations	Lack of a clear plan and management zones would lessen the effectiveness of existing staff and volunteers over time. This would result in adverse long-term moderate impacts to the operation of the park.	A clear plan of action and increased staff to implement those actions would result in highly effective park operations and coordination of partners and volunteers to protect resources and serve visitors. The effect would be beneficial.	Same as alternative B.	Same as alternative B.
Unavoidable Adverse Impacts	Minor adverse impacts on natural resources would be caused by human use in some areas in the South Unit resulting from ongoing recreational use of land and facilities (e.g., soil compaction, vegetation trampling, wildlife disturbances, and decreased opportunities for solitude). Although these impacts would be unavoidable, mitigation to reduce them would be carried out where possible.	Under alternative B, the activities related to the construction of additional facilities as well as human use, would result in minor adverse impacts on natural resources in some areas of the South Unit. Although these impacts (e.g., soil compaction, vegetation trampling, wildlife disturbances, and decreased opportunities for solitude) would be unavoidable, mitigation to reduce them would be carried out where possible.	Same as alternative B.	Same as alternative B.
Irreversible and Irretrievable Commitments of Resources	With the exception of consumption of fuels and raw materials for maintenance activities, no actions in this alternative would result in consumptions of nonrenewable natural resources or use of renewable resources that would preclude other uses for a period of time.	Under alternative B, there would be a commitment of land, raw materials, and consumption of fuels associated with the construction of the new visitor and administrative facilities as described in detail in “Chapter 3: Alternatives, Including the Preferred Alternative.” These energy requirements, raw materials and land requirements to construct new facilities represent an irretrievable commitment of resources.	Same as alternative B.	Same as alternative B.
Relationship of short-term uses and long-term productivity	Under alternative A, the South Unit would continue to be managed as it is, and no management zones are prescribed. Under the No-Action Alternative, the park would maintain its long-term productivity and there would be virtually no new development or appreciable loss of long-term ecological productivity.	Short-term impacts might result from construction of new visitor and administrative facilities to resources such as local water pollution, as detailed in the analysis of specific impact topics. Noise and human activity from construction might displace some wildlife from the immediate area. However, these activities would not jeopardize the long-term productivity of the environment except in areas occupied by new facilities. Proposed actions would also yield long-term benefits from a visitor experience perspective.	Short-term impacts might result from construction of new visitor and administrative facilities to resources such as local water pollution, as detailed in the analyses of specific impact topics. Noise and human activity from construction and restoration might displace some wildlife from the immediate area. However, these activities would not jeopardize the long-term productivity of the environment except in areas occupied by new facilities.	Same as alternative C.