Final
General Management Plan /
Environmental Impact Statement
July 2010

Cumberland Gap National Historical Park

Middlesboro, Kentucky

The Hensley Settlement

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FINAL
GENERAL MANAGEMENT PLAN /ENVIRONMENTAL IMPACT STATEMENT

CUMBERLAND GAP NATIONAL HISTORICAL PARK
MIDDLESBORO, KENTUCKY

General management plans are long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in the parks. Cumberland Gap National Historical Park's last comprehensive management planning effort was completed in 1979. Since that time many changes have taken place – patterns and types of visitor use have changed and the park's primary cultural landscape element has also changed as a result of construction projects involving the twin-bore Cumberland Gap Tunnel system, highway relocations, and the rehabilitation of the Cumberland Gap and Wilderness Road. In addition, acquisition of the Fern Lake watershed requires a defined management approach for resource use and protection. The park faces new resource and other management challenges as a result of these and other changes. This Final General Management Plan will provide management direction for the park for the next 15 to 20 years.

This *Final General Management Plan* examines three alternatives for managing the Cumberland Gap National Historical Park. The impacts of implementing each of the alternatives are also analyzed. One of the three alternatives is a "no-action alternative" that reflects park current conditions and management actions continued into the future. This alternative provides a baseline against which to compare the other alternatives. In Alternative B, the park provides some additional opportunities for access for visitors to enjoy a wide variety of cultural and natural resources in an outdoor setting. Alternative C, the preferred alternative, provides additional opportunities for access for visitors to enjoy the park's cultural and natural resources, while increasing and formalizing partnering efforts, and increasing opportunities for educational and interpretive activities.

This *Final General Management Plan / Environmental Impact Statement* has been distributed to other agencies and interested organizations and individuals for their review, after the Environmental Protection Agency's notice of availability has been published in the Federal Register. The no-action period for this document will last for 30 days.

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SUMMARY

BRIEF DESCRIPTION OF THE PARK

Cumberland Gap National Historical Park (hereafter also referred to as the park) was authorized by Congress in 1940 to commemorate the story of the first doorway to the west. The park is authorized by Congress not to exceed 50,000 acres, and presently includes 24,531 acres. Included within the 24,531 acres are 14,091 acres of Recommended Wilderness as well as portions of the Fern Lake watershed.

PURPOSE OF THE GENERAL MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT

General management plans are required for all units of the national park system and are intended to establish future management direction. This General Management Plan provides comprehensive guidance for perpetuating natural systems, preserving cultural resources, and providing opportunities for quality visitor experiences at Cumberland Gap National Historical Park. This new general management plan updates the management framework for the park, addresses changing issues and conditions, incorporates new resource information, and provides management direction for new park lands.

Although a general management plan provides the analysis and justification for future funding, the plan in no way guarantees that money will be forthcoming. Requirements for additional data for legal compliance and competing national park priorities can delay implementation of actions. Full implementation of a plan could lie many years in the future.

MANAGEMENT ZONES

Management zones and prescriptions indicate how different areas of the park would be managed. The following four management zones were developed for the park: Cultural Resource Zone, Natural Zone, Recommended Wilderness Zone and Developed Zone. The focus of the Cultural Resource Zone is on education, outreach, and restoring and preserving cultural resource conditions. The Natural Zone focuses on preserving the natural environment to allow visitors more diverse outdoor experiences within the park. The Natural Zone incorporates increased visitor activities while preserving the natural experience. The Recommended Wilderness Zone is the same for all action alternatives. It focuses on preserving the natural environment to allow visitors to experience the area the way our ancestors did hundreds of years ago. This zone encompasses the majority of the park (14,091 acres) and provides the visitor with an opportunity to experience nature where human impact is largely unnoticeable and natural forces are the primary influence on the landscape. The Developed Zone focuses on providing visitor access, information, structured activities, and other visitor services. This zone provides opportunities for visitors to gather and learn about the varied cultural and natural resources in the park, engage in interpretive activities, and have access to park facilities.

ALTERNATIVES

The NPS developed all alternatives with substantial public, interagency, and NPS staff participation during the scoping process. Three alternatives have been developed for managing visitor use and resources at Cumberland Gap National Historical Park. Each alternative provides a different management approach. The alternatives were based on the park's purpose and significance, fundamental resources and values, legal mandates, public views, and information on visitor use and park resources. The alternatives are: Alternative A – the No Action Alternative, Alternative B, and Alternative C, the preferred alternative. The Recommended Wilderness Zone would be the same under Alternatives B and C. The 4,500 acre Fern Lake watershed and Fern Lake and surrounding area would be fully acquired and would be opened for visitor use under any of the alternatives. New

facilities that could be constructed at Fern Lake would include a composting comfort station and the acquisition, stabilization, and maintenance of a boat house and two residences.

Alternative A – No-Action

Alternative A consists of a continuation of current management practices, directions, and trends at Cumberland Gap National Historic Park. The types of park visitor activities and uses would remain the same as they are currently, except new activities at Fern Lake would include fishing, boating (no gasoline engines, electric trolling motors are appropriate), with nearby picnicking, hiking, and horseback riding. Four (full-time equivalent) NPS staff members would be added to the park primarily to assist with management requirements for the Fern Lake watershed, as well as the Hensley Settlement.

The park has a wide variety of interpretive or outreach/education programs that have been a key element in its success over the years. These programs include Heritage Fairs, Nature Fairs, and a large number of educational programs. In addition, partnering programs with local and regional organizations have been developed. Under Alternative A, the numbers and types of these programs would continue at their present levels as funding allows.

Under Alternative A, there would be no major changes in the condition or character of natural and cultural resources in the majority of the park. Efforts to preserve as many historic structures and landscapes as possible, with emphasis of the Historic Districts, would continue. Natural resource management programs would continue to emphasize protection of natural resources and processes. The park would also be responsible for maintaining the character and condition of the Fern Lake watershed as well as Recommended Wilderness. No new programs, activities, trails, or visitor uses would be expected.

Under the No Action Alternative, the existing management zones, as specified in the 1979 Master Plan, would continue to be implemented. There are currently three zones at the park with a variety of sub-zones. The existing zoning includes Development, Natural, and Historical Zones.

Alternative B

Under Alternative B opportunities for visitor access would be increased by providing additional park facilities as compared to Alternative A. This would expand visitor use of the park, while avoiding and minimizing potential adverse effects on natural and cultural resources. This would be achieved by strategically locating and limiting the numbers and types of new facilities, primarily within the newly established Developed Zones at Fern Lake, areas adjacent to the Hensley Settlement, the Visitor Center area, and the Wilderness Campground. Acquisition and management of Fern Lake under Alternative B would be the same as Alternative A, except under Alternative B a new Developed Zone would be establish at Fern Lake that would make it possible to construct and operate new facilities to provide increased visitor access to this area.

By creation of several new and limited Developed Zones, connectivity between different areas of the park would be increased under Alternative B compared to Alternative A. Under Alternative B, seven new minor facilities have been identified for Developed Zones at Fern Lake, the Gap area, and areas adjacent to the Hensley Settlement that allow for additional facilities and provide visitors increased access to the park. Visitors would experience increased connectivity between the campground and the Gap and the Town of Cumberland Gap via enhanced biking and hiking trails. Expansion of the Developed Zone to include Kentucky State Highway 988 from Sugar Run to the Gap area would allow greater visitor access to this part of the park. Inclusion of Pinnacle Road in the Developed Zone would have a similar effect. Creation of a Developed Zone in areas near the Hensley Settlement would increase the potential use of this important resource for a wider variety of visitor and concessioner

activities such as wagon rides and guided tours as compared to Alternative A. These management actions would provide increased opportunities for concession and commercial services.

Creation of a Developed Zone on the west side of the Hensley Settlement would allow for improvement of Shillalah Creek Road (to remain gated) and creation of a new parking area at the base of Brush Mountain, providing visitors with an improved ability to park, and then hike, bike, or ride horses to the Hensley Settlement. Creation of a Developed Zone on the east side of the Hensley Settlement would provide visitors with an increased potential to access more facilities such as campsites, trails, and Martin's Fork Cabin as compared to Alternative A. In addition, visitors would be provided with increased access to the Shillalah Creek Wildlife Management area and the Kentucky Division of Water lands located adjacent to the park. Visitors would continue to use and experience the Civic Park Area near Sand Cave and White Rocks within the new Developed Zone.

Additional resource management (four additional, full-time equivalent staff) would be required to maintain the condition and character of natural and cultural resources and to manage and operate new facilities in the park. Resource management efforts needed to maintain resource conditions and character in all other areas of the park would otherwise be similar to Alternative A. Under Alternative B, the level of public outreach, education and partnering would be the same as Alternative A. No additional staffing would be proposed to support these activities.

Alternative C – Preferred Alternative

Alternative C is the plan the NPS proposes to implement over the next 15 to 20 years. Alternative C would provide a greater amount of visitor access and facilities in the park as compared to Alternative A. Alternative C would also feature increased levels of education, outreach, and formalized partnering. Otherwise, Alternative C would be similar to Alternative B in that it provides slightly expanded visitor access to the park while minimizing the potential for adverse effects on resources. New facilities would be sited and designed within their cultural and natural settings and context. Sustainable practices would be implemented, and new facilities would be designed to be unobtrusive.

Eleven new minor facilities are proposed for construction in Developed Zones near Fern Lake, the Gap area, and the areas adjacent to the Hensley Settlement under Alternative C. These facilities would provide increased visitor access to the park. Under Alternative C, the Developed Zone at Fern Lake and the Hensley Settlement would be larger than Alternative A, providing the opportunity for additional facilities in the future. Creation of a Developed Zone on the west side of the Hensley Settlement would allow for improvement of Shillalah Creek Road by creation of a new parking area at the base of Brush Mountain and paved or expanded parking immediately adjacent to the Hensley Settlement. Creation of a Developed Zone on the east side of the Hensley Settlement (adjacent to the existing Hensley Settlement Historic District) would provide visitors with an increased potential to access more facilities such as campsites, trails, and Martin's Fork Cabin as compared to Alternative A. In addition, visitors would be provided with increased access to the Shillalah Creek Wildlife Management area and the Kentucky Division of Water lands located adjacent to the park.

Camping opportunities would change by providing electrical hookups in select locations at the Wilderness Road campground, as well as providing access for horse trailers. Under Alternative C, connectivity from the visitor center to Fern Lake would be provided through a Developed Zone along the eastern end of the lake that would connect to the Developed Zone around the visitor center at the Gap. Additional park facilities, such as hiking trails, composting comfort station, or maintenance road, could be constructed within this larger Developed Zone. A Natural Zone would also be established to incorporate the rest of the Fern Lake watershed.

Opportunities for participating in interpretive and education programs (e.g., guided hikes, seasonal and school programs), and some special events would increase, compared to Alternative A. Measures

would be taken to formalize partnering efforts, and establish programs that support the park. Opportunities to enjoy recreational activities would increase, with increased opportunities for access in a variety of settings. These changes would also increase opportunities for establishing future concession and commercial services.

Addition of new facilities and activities would require additional staff to manage cultural and natural resources in order to maintain resource conditions and character while providing quality visitor experiences. A total of 7.2 full time equivalent staff would be hired under Alternative C to address these needs.

ENVIRONMENTAL CONSEQUENCES

For all three alternatives, the majority of impacts on natural resources and cultural resources would result from increasing access and visitor use over the life of the plan. Impacts on historic resources, natural resources, regional socioeconomics and NPS operations would not differ substantially among the action alternatives, however. The park would continue management efforts to maintain 14,091 acres as wilderness, as directed by Congress. Under all alternatives, this natural area provides outstanding opportunities for solitude and primitive wilderness experiences.

Visitors have expressed overall satisfaction with most existing opportunities in the park. Impacts associated with implementing Alternative A would therefore be associated with continuation of existing visitor experiences and use. Maintaining the current use, access, and range of visitor experiences would have long-term, minor and beneficial effects on visitor use and experience for those that are satisfied with existing conditions. Many visitors voiced preferences for more access and interpretive programs and the lack of these would result in a long-term, moderate, and adverse effect on visitor experience. Impacts of Alternative A on natural resources and soundscape would continue to be primarily long-term, negligible, and both beneficial and adverse. Impacts to cultural resources based on National Environmental Policy Act requirements would be mainly long-term, minor to moderate, and both adverse and beneficial. Impacts to cultural resources based on Section 106 of the National Historic Preservation Act would be considered to be potentially adverse, since specific project designs are not yet available (the only option according to Section 106 requirements is "no effect", which cannot be stated at the present time). In either case, compliance assessments will be required to meet both National Environmental Policy Act and Section 106 requirements for future projects. These assessments will be tiered to the general management plan/environmental impact statements in the future. Impacts to transportation and park operations would be long-term, minor and adverse. Socioeconomics and concessions and commercial services would not experience major changes, and the impacts would be long-term and short-term, moderate and beneficial for socioeconomics and long-term, moderate and adverse for concessions and commercial services. Impacts to scenic resources and visual quality would continue to be long-term, minor and beneficial.

Impacts associated with implementing Alternative B are primarily related to increasing visitor access and activity in the Developed Zones associated with the Hensley Settlement, the Gap, and Fern Lake. The park would be protected by continuation of effective management of natural and cultural resources, while at the same time increasing services and access, primarily in the Developed Zones. Increasing visitor access and range of visitor experiences in this manner would have long-term, moderate to major and beneficial effects on visitor use and experience, while minimizing potentially adverse effects of any new facilities. Visitors who voiced satisfaction with current conditions may perceive a long-term moderate, adverse affect related to visitor use and experience. Effects of natural and cultural resources would be primarily related to construction and operation of new facilities. The NPS would implement sustainable practices and design facilities to blend with their natural and cultural environments/context. In addition, environmental assessments would be completed to assure potentially adverse effects are avoided or greatly minimized through proper siting and design. This would mitigate many potentially adverse impacts. Adverse impacts on natural resources would

therefore be primarily long- and short-term, minor to moderate. Adverse impacts on cultural resources based on National Enviornmental Policy Act requirements would be primarily negligible to minor, with minor, adverse effects due to facility construction, operation and use, and moderate, beneficial effects on ethnographic resources and values, and overall minor to moderate benefits from continuing management, education and outreach efforts. Impacts to cultural resources based on Section 106 of the National Historic Preservation Act would be the same as Alternative A. Impacts of Alternative B range from long- and short-term, minor, and adverse for soundscape, scenic resources, and visual quality, and park operations. Beneficial impacts on socioeconomics, transportation, and concessions and commercial services would be long- and short-term minor to moderate.

Alternative C would have many impacts that are similar to Alternative B, particularly for natural and cultural resources. Construction and operation of new facilities would cause long-term, minor adverse effects to archeological resources. In general, the effects of increased education, outreach, and partnering efforts on most natural and cultural resources would be long-term, moderate to major and beneficial. Increased access and visitor services would provide many of the same results, both beneficial and adverse. Impacts to cultural resources based on Section 106 of the National Historic Preservation Act would be the same as Alternative A. There would be long-term moderate, beneficial effects to park operations, transportation, concessions and commercial services. Impacts of Alternative C on socioeconomics would be similar to Alternative B, long- and short-term, negligible to moderate and beneficial. Long- and short-term, minor and adverse impacts would occur as a result of implementation of Alternative C on soundscape and scenic resources and visual quality.

THE NEXT STEPS

The Cumberland Gap National Historical Park *Final General Management Plan / Environmental Impact Statement* includes letters from governmental agencies, any substantive comments on the draft document, and NPS responses to those comments. Following distribution of the *Final General Management Plan / Environmental Impact Statement* and a 30-day no-action period, a record of decision approving a final plan will be signed by the NPS regional director. The record of decision will document the NPS selection of an alternative for implementation. With the signed record of decision, the plan can then be implemented, depending on funding and staffing. (A record of decision does not guarantee funds and staff for implementing the approved plan.) The park must compete with other units of the National Park system for limited implementation funding.

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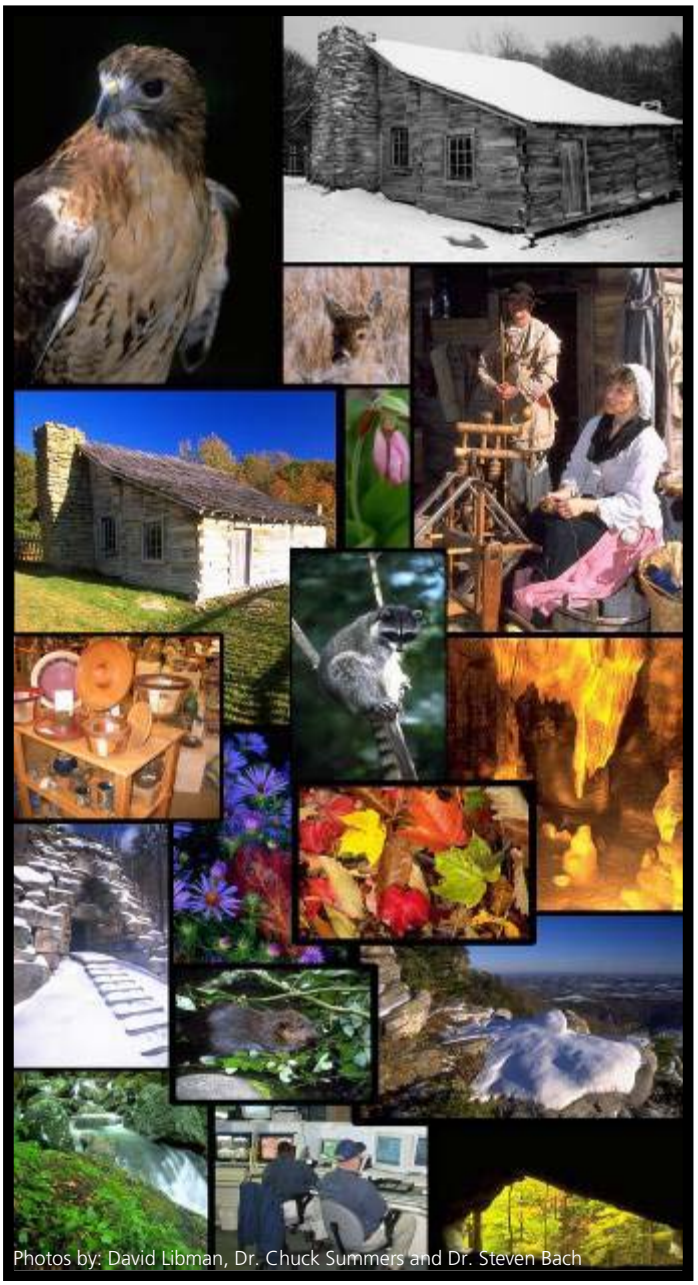
Chapter 1

PURPOSE AND NEED FOR A GENERAL MANAGEMENT PLAN



Cumberland Gap National Historical Park
Final General Management Plan/
Environmental Impact Statement

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CHAPTER 1
PURPOSE AND NEED FOR A GENERAL MANAGEMENT PLAN

INTRODUCTION

This *General Management Plan / Environmental Impact Statement* presents and analyzes three alternative future directions for the management and use of Cumberland Gap National Historical Park. The plan also presents a discussion of potential commercial services and concessions with respect to providing visitors access to various resources and programs within the park, espcially the campground, the Hensley settlement and the Fern Lake lands. It therefore serves as the park's commercial services plan as well as the General Management Plan. The potential environmental impacts of all alternatives (including impacts related to commercial services) are also identified and assessed.

General management plans are intended to be long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in the parks. General management plans usually provide guidance for a 15-20 year period. Actions directed by general management plans or in subsequent implementation plans are accomplished over time. Budget restrictions, requirements for additional data or regulatory compliance, and competing national park system priorities prevent immediate implementation of many actions. As a result, implementation of major or especially costly actions could be delayed into the future.

BRIEF DESCRIPTION OF THE PARK

Cumberland Gap National Historical Park is located on the tri-state boundaries of Kentucky, Virginia, and Tennessee and encompasses 24,531 acres (Figure 1). A map of the park is depicted in Figure 2, with detailed features of the Cumberland Gap Area shown in Figure 3. The term *park* is used to refer to all units of the national park system and will be used throughout this document to refer to Cumberland Gap National Historical Park. The park lies in four counties in the three states, ranges from one to four miles in width, and stretches for 20 miles astride the forested Cumberland and Brush Mountains. Over 14,000 acres in the park are managed as wilderness.

Cumberland Gap National Historical Park was authorized by Congress on June 11, 1940 to commemorate the story of the first doorway to the west (Appendix A includes the park legislation). Carved by wind and water, Cumberland Gap forms a major break in the formidable Appalachian Mountain chain. First used by large game animals in their migratory journeys and then followed by American Indians, the Cumberland Gap was the first and foremost avenue for the settlement of the interior of this nation. In the late 17th century, this route into the rich hunting lands of "Kaintucke" was known to several American Indian tribes, but only a few handfuls of Europeans. In 1750, Dr. Thomas Walker, surveyor of the Loyal Land Company, became the first to document the route to the Gap. Dr. Walker named the route in honor of William, Duke of Cumberland, brother of King George II. In 1775, a little known long-rifle hunter named Daniel Boone was commissioned to blaze a road through the Gap. Boone's Trace evolved into Wilderness Road, establishing his place in history as a frontiersman and pathfinder (Figure 4). Cumberland Gap was the primary route to the west until 1810.

During the Civil War, the Gap was thought to be strategically important to both the Confederate and Union armies. There was no military railroad near the Gap, so portions of Wilderness Road were used to transport supplies, troops, and ordnance.

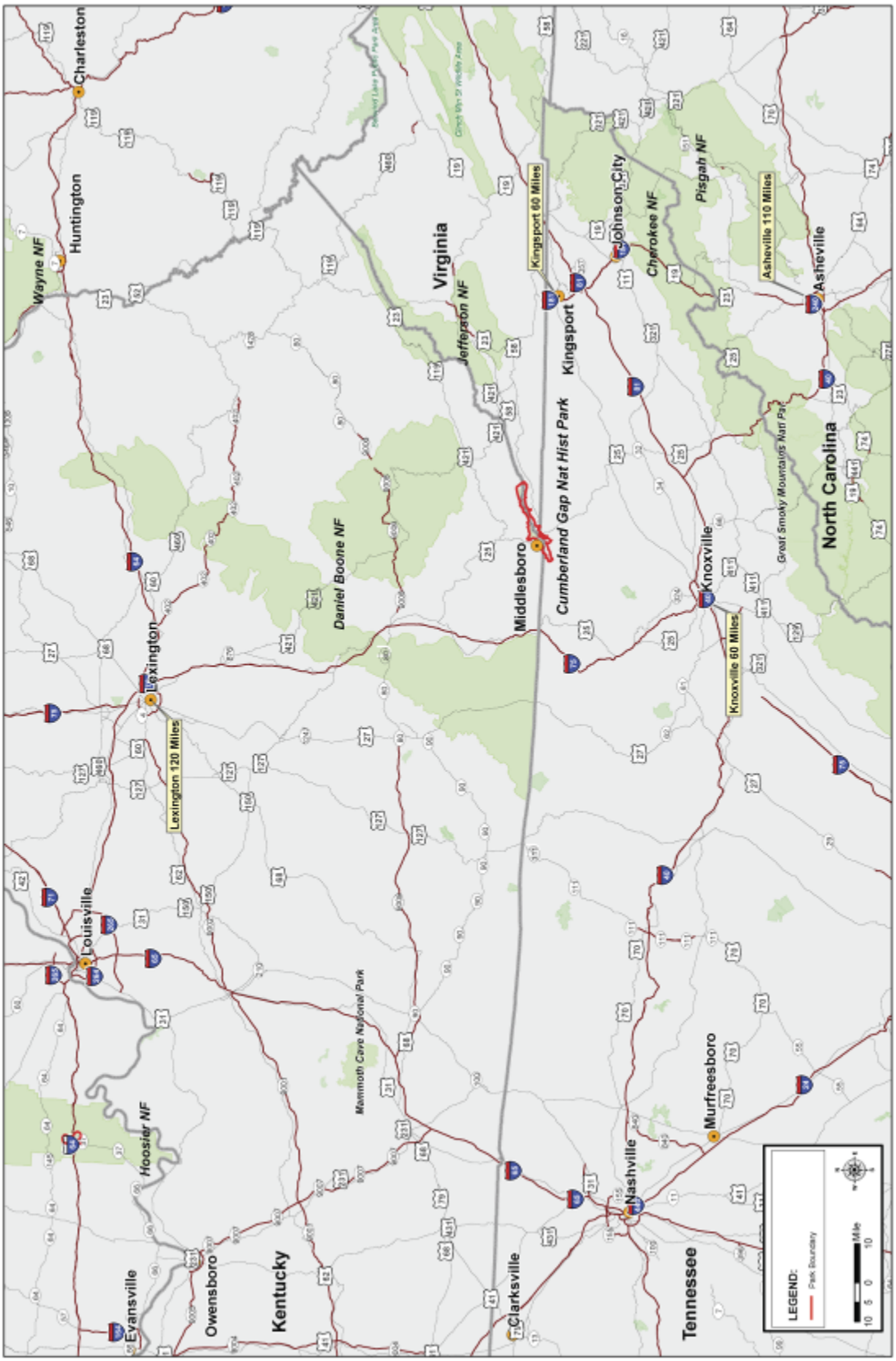

Figure 1

Location Map

Cumberland Gap National Historical Park

U.S. Department of the Interior - National Park Service

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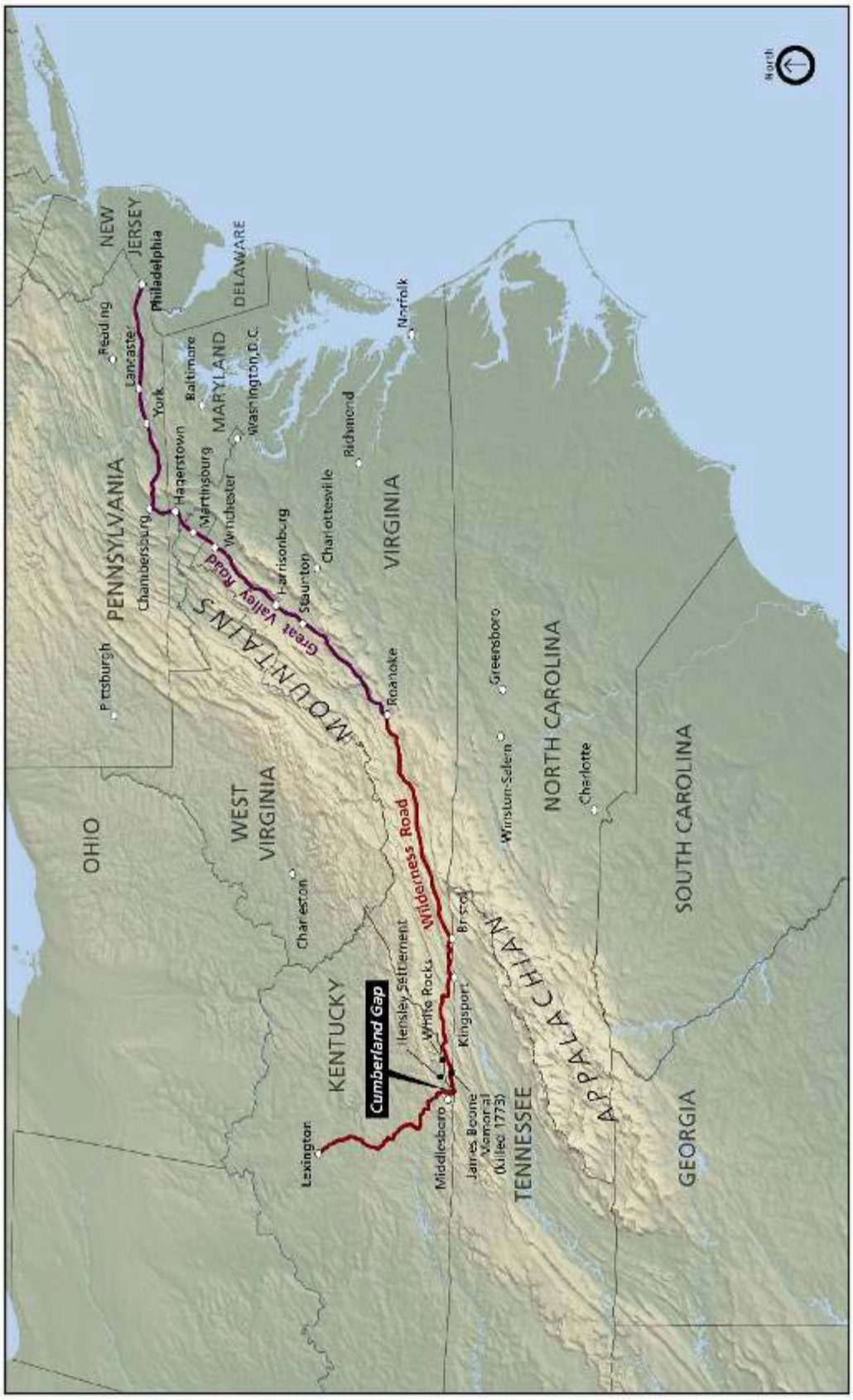


Figure 4

Location of Cumberland Gap National Historical Park in Relation to the Wilderness Road and Region

Cumberland Gap National Historical Park
U.S. Department of the Interior - National Park Service

In 1908, the U.S. Bureau of Public Roads constructed the “Object Lesson Road” through Cumberland Gap, opening the area to increased traffic. In the 1920s, major segments of the old Wilderness Road became U.S. Highway 25E and U.S. Highway 58.

In 1973 Public Law 93-87 directed the National Park Service (NPS) to construct a tunnel through Cumberland Mountain to remove traffic from the historic corridor and improve traffic safety. By 1996, the park completed approximately 280 million dollars in construction projects involving construction of the twin-bore Cumberland Gap Tunnel system, relocation of U.S. Highway 25E and Highway 58, and rehabilitation of the Cumberland Gap and Wilderness Road, the park’s primary historic feature, to its natural and historic topography.

Another key historic resource in the park is Hensley Settlement, a community of 12 scattered farmsteads situated on an isolated plateau on Brush Mountain originally established by Sherman Hensley around 1904. The settlement consists of several log cabin homes, other farm structures, split rail fences, a one-room log cabin schoolhouse, pastures, and woodlands with scenic mountain viewsheds (Figure 5).

Among the varied resources in the park are 24 known cave features, including Gap Cave, a major cave system. Historically, Gap Cave was privately owned, and private tours were led through the cave. The NPS purchased the cave in 1992 and removed a lighting system and a set of walkways. The use of standard lighting was replaced by the use of hand held flashlights to enhance the visitor’s experience and protect resources. The park also runs a wild caving program in Gap Cave as well as some of the other caves in the park. Sand Cave, located on the extreme northeast end of the park, is an important historical and scenic resource.

As a result of the Fern Lake Conservation and Recreation Act of 2001 (Appendix A), the park was authorized to complete one of its original goals: protection of the Fern Lake Watershed. The Fern Lake watershed is an approximately 4,500-acre area located at the southwestern end of the park (Figure 2). This area provides both a scenic view from the park's most visited point, Pinnacle Overlook, and also provides clean drinking water to the nearby city of Middlesboro, Kentucky. The protection of the watershed was a "win-win" for everyone in the Tri-State area. Legislation authorizing this purchase was passed as part of an appropriations bill, Public Law 108-199, and signed by the President in January 2004. As of May 27, 2009, the majority of land surrounding Fern Lake had been acquired. Fern Lake and approximately 600 acres surrounding the lake are the subject of future acquisition.

PURPOSE OF THE GENERAL MANAGEMENT PLAN

The approved general management plan will be the basic document for managing Cumberland Gap National Historical Park for the next 15-20 years. The purposes of this general management plan are as follows:

- Confirm the purpose, significance, and special mandates of Cumberland Gap National Historical Park.
- Clearly define resource conditions and visitor uses and experiences to be achieved in the park.
- Provide a framework for park managers to use when making decisions regarding the best methods to: (1) protect park resources, (2) provide quality visitor uses and experiences, (3) manage visitor use, and (4) determine the kinds of facilities to develop in or near the park.
- Ensure that this foundation for decision making has been developed in consultation with interested stakeholders and adopted by NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

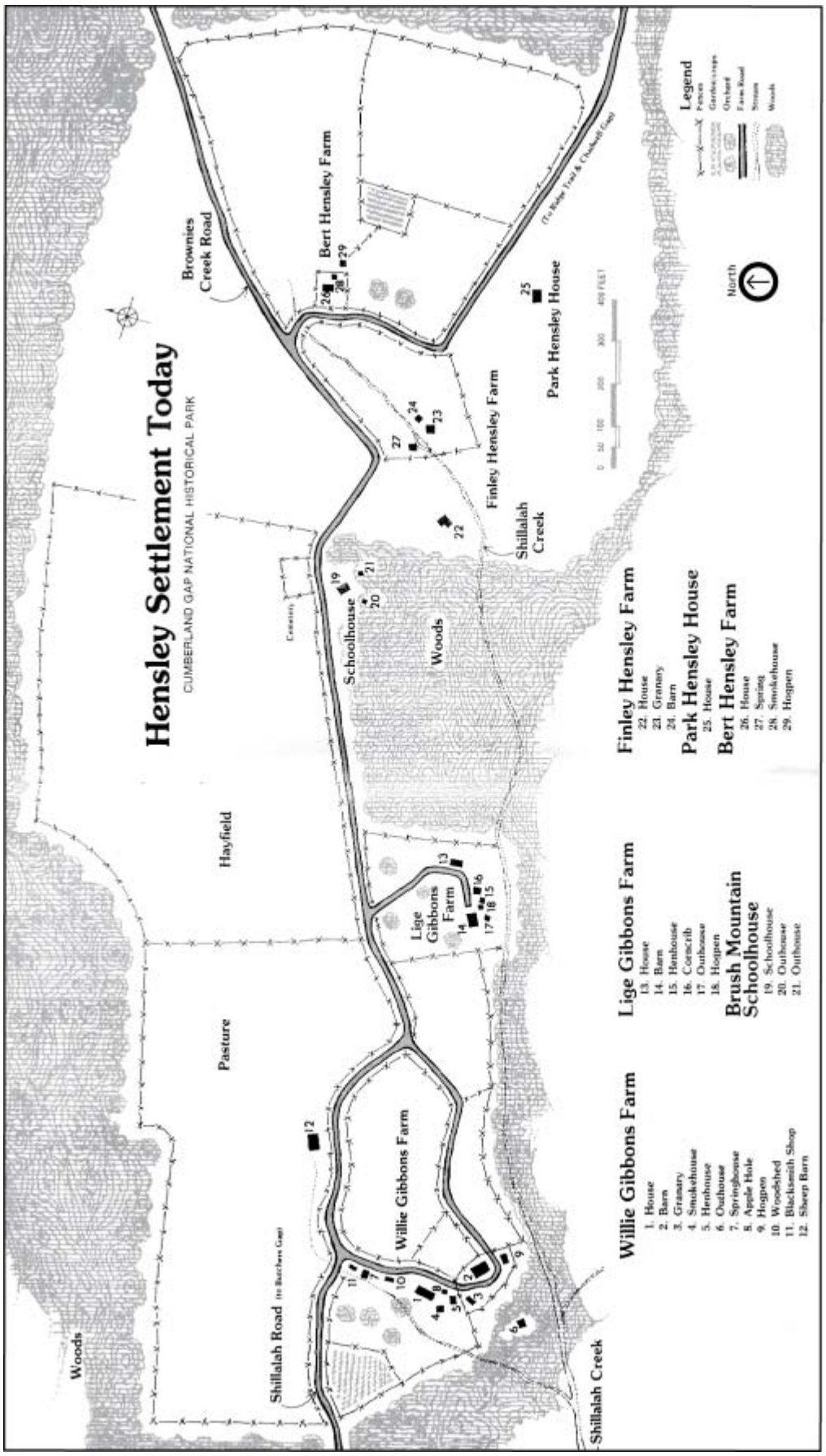


Figure 5

Detailed Map of the Hensley Settlement

Cumberland Gap National Historical Park
U.S. Department of the Interior - National Park Service

Legislation establishing the NPS as an agency and governing its management provides fundamental direction for the administration of Cumberland Gap National Historical Park (and other units and programs of the national park system). This general management plan will build on these laws and the legislation that authorized Cumberland Gap National Historical Park to provide a vision for the park's future.

The general management plan does not provide specific details on the prioritization or implementation of particular programs or projects. Those decisions will be addressed in more detailed future planning efforts. All future plans will tier from the approved general management plan. Should projects be proposed with a potential for affecting park resources, an environmental assessment, tiered to the general management plan, would be required.

NEED FOR THE PLAN

This general management plan for Cumberland Gap National Historical Park is needed because the last comprehensive planning effort for the park was completed in 1979. Many changes have occurred since then — patterns and types of visitor use have changed and the park's landscape has also changed as a result of construction projects involving the twin-bore Cumberland Gap Tunnel system, highway relocations, and rehabilitation of the Cumberland Gap and Wilderness Road. In addition, acquisition of Fern Lake and surrounding area requires a defined management approach for resource use and protection. Because Fern Lake is the drinking water supply for the City of Middlesboro, however, a limited range of visitor activities (hiking, fishing, electric motor boating, and non-motorized boating) and only minor facilities would be appropriate for this area in the future. Acquisition of Fern Lake and surrounding area continues on a willing-seller basis as authorized by the Fern Lake Conservation and Recreation Act of 2001. This current *General Management Plan* provides management direction for these new park lands.

Each of these changes has major implications for visitor access to the park and characteristics important to visitors. The facilities needed to support the visitors, resource management, and park operations must be revisited to ensure the mission of the park is achieved.

A general management plan is also needed to meet requirements of the National Parks and Recreation Act of 1978 and NPS policy, which mandate development of a general management plan for each unit in the national park system.

THE NEXT STEPS

The Cumberland Gap National Historical Park *Final General Management Plan / Environmental Impact Statement* includes letters from governmental agencies, any substantive comments on the draft document, and NPS responses to those comments. Following distribution of the *Final General Management Plan / Environmental Impact Statement* and a 30-day no-action period, a record of decision approving a final plan will be signed by the NPS regional director. The record of decision will document the NPS selection of an alternative for implementation. With the signed record of decision, the plan can then be implemented, depending on funding and staffing. (A record of decision does not guarantee funds and staff for implementing the approved plan.) The park must compete with other units of the National Park system for limited implementation funding.

IMPLEMENTATION OF THE PLAN

Implementation of the approved plan will depend on future funding. Approval of a plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the approved plan could be many years in the future.

Implementation of the approved plan also could be affected by other factors. Once the general management plan has been approved, appropriate feasibility studies and more detailed planning and

environmental documentation would be completed as required before any proposed actions can be carried out. These activities could include the following:

- Environmental Assessments would be prepared for proposed projects on a site-specific basis. All proposed projects would be required to meet requirements of the National Environmental Policy Act, National Historic Preservation Act, and NPS policies, guidance, and regulations;
- Appropriate permits would be obtained before implementing actions that could affect resources;
- Appropriate federal and state agencies would be consulted concerning actions that could affect threatened and endangered species;
- American Indian tribes and the state historic preservation offices would be consulted regarding cultural resources that could be affected;
- The NPS would coordinate any activity that could affect tunnel operations with the Tunnel Authority; and
- Appropriate agencies and organizations would be consulted regarding future use of the Fern Lake area.

These more detailed plans and activities would tier from the approved general management plan, describing specific actions managers intend to take to achieve desired conditions and long-term goals.

FOUNDATION FOR PLANNING AND MANAGEMENT

Park Mission

The primary mission of Cumberland Gap National Historical Park is to preserve and protect in perpetuity the natural and cultural resources of Cumberland Gap National Historical Park to provide for the enjoyment, benefit, and inspiration of the public. This mission does not supersede the NPS Organic Act (see "Servicewide Laws and Policies" section of this chapter).

Purpose

Purpose statements convey the reason(s) for which the park was established and are based on the Cumberland Gap National Historical Park's legislation (Appendix A) and legislative history and NPS policies. These statements provide the foundation for park management and use. The purpose of Cumberland Gap National Historical Park is:

- To preserve and protect the historic Cumberland Gap National Historical Park, including the Warrior's Path of the American Indians and the pioneer Wilderness Road.
- To preserve and interpret its scenic, geological, cultural, natural and historical resources for the enjoyment, benefit, and inspiration of present and future generations.

Significance

Significance statements capture the essence of Cumberland Gap National Historical Park's importance to our country's natural and cultural heritage. Significance statements describe the park's distinctiveness and help to place the park within its regional, national, and international contexts. Significance statements answer questions such as "Why are Cumberland Gap National Historical Park's resources distinctive?" and "What do they contribute to our natural/cultural heritage?" Defining the park's significance helps managers make decisions that preserve the resources and values necessary to accomplish the park's purpose. The significance statements for Cumberland Gap National Historical Park are provided in Table 1.

Fundamental Resources and Values

Fundamental resources and values are systems, processes, features, visitor experiences, stories, and scenes that deserve primary consideration in planning and management because they are critical to maintaining the park's purpose and significance. Fundamental resources and values are subject to periodic review and update based upon new information or changing park conditions. The park's fundamental resources and values are identified in Table 1.

Table 1. Fundamental Resources and Values

SIGNIFICANCE STATEMENT	FUNDAMENTAL RESOURCES AND VALUES
The Warrior's Path through the Gap was a travel route from beyond the Great Lakes to the Carolina and Georgia coasts by American Indians for trade, hunting, and warfare.	• The gap itself. This natural geological feature provided an easier path and connectivity through the Appalachian Mountains from the Great Lakes region to a network of other trails. • Stories about Native Americans following wildlife such as bison and deer on their annual migrations through the Gap.
The Cumberland Gap represents a turning point in American history as the Gap witnessed 200,000 to 300,000 settlers pushing through the Appalachian barrier during the late 18th to early 19th century.	• The gap itself. This natural geological feature provided an easier path and connectivity from the northeast through the Appalachian Mountains to the western frontier. The Gap provided a route for eastbound travelers and commerce as well. • The White Rocks were a landmark that travelers used as a guide to finding their destination. • The story of the opening of the west to settlement. The Gap played an important role in the fulfillment of America's "Manifest Destiny," the historical belief that the United States was destined to expand across the North American continent, from the Atlantic coast to the Pacific Ocean. • Stories about historical figures and events such as Daniel Boone, Thomas Walker, and the return path of the Lewis & Clark expedition.
Situated at the junction of Kentucky, Tennessee, and Virginia, Cumberland Gap National Historical Park played a strategic role in the Civil War during which this narrow transportation corridor changed hands several times.	• The strategic military value of the Gap and the high ground on either side. • Earthworks, roads, batteries, and other elements of site have been preserved and protected and have educational and inspirational value to visitors. • Stories and physical evidence of use of the caves by soldiers during the war.

Table 1. Fundamental Resources and Values (Continued)

SIGNIFICANCE STATEMENT	FUNDAMENTAL RESOURCES AND VALUES
Cumberland Gap National Historical Park preserves the Hensley Settlement Historic District—a family farmstead consisting of numerous farm cabins, fences, other farm structures and a one-room log school house that illustrates the hardships faced by families who chose to live a mid-nineteenth century lifestyle well into the 20th century.	• The Hensley Settlement contains an impressive collection of restored cabins and other farm structures in a setting that retains substantially the same look and feel that the first inhabitants would have experienced at the turn of the 20th century. • The solitude visitors experience at the site, which is quite remote and removed from modern sounds and sights. • The historic landscape contains fruit trees, which were important to the families and continue to be important to visitors and add to the story and interpretive values. • The stories of building techniques and materials add to the interpretive values. Rare and in some cases unique adaptations to structures in order to use available materials. • The family cemetery, which, sadly, includes several graves of small children. • Stories about the hard life by modern standards but a good life according to the family patriarch.
There are 24 caves and other geological features in the park. Gap Cave includes innumerable stalactites and stalagmites, columns, draperies, pools and terrace formations, all in very colorful and extravagant displays.	• Cave ecosystems and habitats. Fragile and sensitive nature of the cave environments. • Threatened and endangered species. • Cultural features, including graffiti and other evidence of use of the caves by animals and humans over thousands of years. • Recreational experiences and values. • The Gap Cave is the source of drinking water for communities outside the park. • The caves provide opportunities for continuing scientific research. • The continuing mystery associated with unexplored and uncharted caves. • Sand cave, White Rocks, the doublings, Devil's Garden, and other natural features that were specifically mentioned in the park's enabling legislation.

The fundamental resources and values listed in Table 1 are only a portion of the park's total resources and values. All resources and values were considered in this planning effort; other resources and values identified include:

- The watershed of Fern Lake provides a protected environment for water drainage into the Lake, which is the source of drinking water for Middlesboro, Kentucky.
- The views of the Fern Lake watershed are protected.
- The Iron Furnace is evidence of the story of attempts to develop an iron industry in the area.
- The Cumberland Gap tunnel, a remarkable engineering accomplishment, allowed the restoration of Wilderness Road, and is a marvel of operation and maintenance.
- The 12,191 acres of recommended wilderness and 1,900 acres of potential wilderness within the approximately 24,531-acre park that exists in three states and four counties provide habitat for numerous species of flora and fauna and opportunities for visitors to view and enjoy them.

- The continuing association with the park by the Hensley and Gibbons families is important.

Mission Goals

Each unit of the national park system develops mission goals based on those of the NPS. The mission goals of Cumberland Gap National Historical Park are summarized in the statements that follow:

- Natural and cultural resources and associated values at Cumberland Gap National Historical Park are protected, restored, and maintained in good condition and managed within their broader ecosystem and cultural context.
- The NPS at Cumberland Gap National Historical Park contributes to visitors' knowledge about natural and cultural resources; management decisions are based on scholarly and scientific information.
- Visitors to the park safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of park facilities, services, and appropriate recreational opportunities.
- Park visitors and the general public understand and appreciate preservation of the park and its resources for present and future generations.
- The park fosters partnerships to extend the benefits of natural and cultural resource conservation, visitor safety, education, and outdoor recreation to present and future generations.

Primary Interpretive Themes

Primary interpretive themes are the most important ideas and concepts communicated about the park. They are the core of the interpretive programs and media presentations provided to park visitors. The following is a list of the park's primary interpretive themes:

- For centuries, Cumberland Gap has been part of a natural corridor through the Allegheny Mountains for bison, American Indians, long hunters, pioneers, soldiers, and since the advent of the automobile, motorists.
- Cumberland Gap was the intersection of two major American Indian trails, known as the "Warrior's Path." Although no American Indian tribes permanently occupied the lands in this region, tribes from throughout eastern North America hunted here, traveled the Warrior's Path, and fought each other for control of this area.
- The more than 300,000 European-Americans who traveled through Cumberland Gap between 1775 and 1810 moved west for a variety of reasons, but most simply came to improve their lives. The men, women, and children who crossed the Cumberland Gap came from all walks of life: from merchants and doctors, to servants and slaves. It is difficult for modern travelers to imagine the hardships experienced by early travelers: hunger, cold, injury, disease, loneliness, and uprooted families.
- Cumberland Gap's strategic location and abundant natural resources made this area desirable during the Civil War and Industrial Revolution periods.
- Cumberland Gap's role as a major transportation route continues today through the Cumberland Gap Tunnel and highway which, in turn, have garnered support to restore the historic Gap corridor to its 1790-1810 appearance.
- Cumberland Gap National Historical Park preserves a long mountain ridge that includes cliffs, streams, and forests where visitors can camp, picnic, and sightsee. The park includes more than 14,000 acres of wilderness where visitors can hike and experience solitude within a vestige of the vast forests that once covered most of eastern North America.

- Cumberland Gap and the Allegheny Plateau are examples of geologic and faulted mountain formations that reveal the uplifting of an ancient seabed.

SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS

Special mandates and administrative commitments refer to specific requirements for Cumberland Gap National Historical Park. They are typically mandated by Congress or the courts. The legislation that created the park (see also Appendix A) mandated the following:

- No public funds would be appropriated to purchase any of the land for the originally designated park.
- Funds could be donated to purchase lands.
- The park would be larger than 6,000 acres and would not exceed 50,000 acres.
- The park would include no lands within the city limits of Middlesboro, Kentucky; Pineville, Kentucky; Cumberland Gap, Tennessee; or lands adjacent to these cities that the cities intended to annex at the time that the park was originally established.

There were several exceptions to the original mandate that stated that no public funds would be appropriated to purchase land for the park. These are described in the paragraphs that follow.

Public Law 93-87, the 1973 Federal Aid Highway Act, authorized the relocation of U.S. 25E to a new alignment, which involved a tunnel and new approaches. The law stated that funds available for parkways could be utilized to fund the reconstruction and relocation of U.S. 25E through the park. The law authorized the park to purchase sufficient right-of-way to relocate the road and construct the tunnel. After construction was completed, the relocated highway, the tunnel, and associated rights-of-way were transferred to the NPS and managed as part of the Cumberland Gap National Historical Park under a General Agreement between the park and the Kentucky Transportation Cabinet and a Memorandum of Understanding between the United States Department of Interior and the State of Tennessee and the Commonwealth of Kentucky (Appendix A).

The General Agreement between the NPS and the Kentucky Transportation Cabinet (signed December 5, 2003) provides continuation of emergency medical services by the Cumberland Gap Tunnel Authority; allows for termination of the Tennessee ambulance service license requirement; and provides federal jurisdiction for emergency medical response, to the Kentucky Transportation Cabinet-owned and State licensed ambulance service (Appendix A).

Scenic Easement

In May, 1992 the NPS entered into an agreement with adjoining landowner on Shillalah Creek Road for a scenic easement of an area that covers approximately 145 acres. The purpose of the easement is to protect the mountain views afforded from Hensley Settlement.

Fern Lake

Section 150 of Public Law 108-199, the Consolidated Appropriations Act, 2004, is entitled "Fern Lake Conservation and Recreation Act, 16 U.S. Code 268a" (Appendix A). This public law authorized acquisition of Fern Lake and approximately 4,500 acres of the Fern Lake watershed with appropriated funds. Fern Lake and the surrounding watershed are important to the residents of Middlesboro, Kentucky, as the lake is their primary source of drinking water. This act allows for protection of the vista of Fern Lake and its watershed from the Pinnacle Overlook, and also protects the water supply for Middlesboro, Kentucky and environs. The law requires conveyance of ownership of Fern Lake, the dam for the lake, and associated devices utilized to draw and deliver water from the lake to the City of Middlesboro. The park will retain a scenic and recreational easement to the lake to allow the

public to utilize the lake for appropriate recreational purposes. The Fern Lake acquisition includes a special use permit for fishing boats, paddle boats, and similar activities.

As a public water supply, Fern Lake falls under the State of Kentucky Administrative Regulation for public and semi-public water supplies (401 KAR 8:20). This regulation recommends that swimming, large motor driven water craft and other human contact be prohibited in public water supply reservoirs. The state regulations also recommend that certain uses, such as horse trails, septic tanks and drain fields are located at least 100 feet from the high water elevation point of the reservoir. Picnicking may be permitted around the lake if plans for the picnic area meet regulatory requirements of the Kentucky Cabinet.

Section 5 of the legislation for the acquisition of Fern Lake (Public Law 108-199) specifies that "In order to better manage lands acquired under this section in a manner that will facilitate the provision of water for municipal needs, as well as the establishment and promotion of new recreational opportunities at the park, the Secretary shall consult with: appropriate officials in the States of Kentucky, Tennessee, and Virginia, and political subdivisions of these States; organizations involved in promoting tourism in these States; and other interested parties."

At the time Middlesboro no longer utilizes Fern Lake for its public water supply, the ownership of the lake would revert to the NPS. In summary, acquisition of the property by the NPS would ensure that the land is not developed, the watershed and scenic views are preserved, and recreational opportunities are enhanced at Cumberland Gap National Historical Park.

Recommended Wilderness

The park includes 14,091 acres of wilderness. A Wilderness Recommendation Study was completed for Cumberland Gap National Historical Park as required by the Wilderness Act of 1964 (16 U.S. Code, 1131-1136). On September 21, 1972, the President recommended to Congress that areas within Cumberland Gap National Historical Park be designated as wilderness and potential wilderness. A revised wilderness recommendation increasing the acreage to 12,191 acres was submitted to Congress in May 11, 1978. The revised recommendation divided the wilderness area into two areas, recommended wilderness (12,191 acres) and potential wilderness (1,900 acres) for a total of 14,091 acres (NPS 1979a) (Appendix A). The area designated as potential wilderness is listed as such due to Lincoln Memorial University ownership of water rights that extend to both the underground and surface portions of the former university property that is now in park ownership (NPS 1973). The area is, therefore, listed as potential wilderness until the university gives up its reserved rights, in which case the area may be designated as "recommended wilderness."

These 14,091 acres are managed as primitive land to protect the wilderness values in accordance with wilderness management policies (NPS 2006a). Management activities for these lands cannot diminish the wilderness eligibility of those lands. As such, the 14,091 acres are managed as wilderness, pursuant to Section 6 of NPS Management Policies 2006 (NPS 2006a). Both potential and recommended wilderness areas are included in this General Management Plan and referred to hereafter as "recommended wilderness."

The Surface Mining Control and Reclamation Act of 1977

The Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. §§ 1234-1328; promulgated in 30 CFR Part 700 et seq) was the first Federal law to regulate the environmental effects of strip mining and to require reclamation of damaged land and water. The Act created two programs: one for regulating active coal mines and a second for reclaiming abandoned mine lands. SMCRA also created the Office of Surface Mining, an agency within the Department of the Interior, to promulgate regulations, to fund state regulatory and reclamation efforts, and to ensure consistency among state regulatory programs.

Section 522 (e)(3) states that after the enactment of the Act and subject to valid existing rights, no surface coal mining operations except those which exist on the date of enactment of the Act shall be permitted which will adversely affect any publicly owned park or places included in the National Register of Historic Sites unless approved jointly by the regulatory authority and the Federal, State, or local agency with jurisdiction over the park or the historic site.

Servicewide Laws and Policies

This section identifies what must be done at Cumberland Gap National Historical Park to comply with federal laws and policies of the NPS. Many park management directives are specified in laws and policies guiding the NPS and, therefore, are not subject to alternative approaches. For example, there are laws and policies regarding management of environmental quality, including the Clean Air Act, the Endangered Species Act, and Executive Order 11990 "Protection of Wetlands." There are also laws governing the preservation of cultural resources, including the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act; and laws regarding the provision of public services, such as the Americans with Disabilities Act. In other words, a general management plan is not needed to decide that it is appropriate to protect endangered species, control exotic species, protect archeological sites, conserve artifacts, or provide for access for handicapped persons. Laws and policies currently in effect have already decided those and many other similar issues for us. Although attaining some of these conditions set forth in these laws and policies may have been temporarily deferred in the park because of funding or staffing limitations, the NPS will continue to strive to implement these requirements with or without a new general management plan.

Some of these laws and executive orders are applicable solely or primarily to units of the national park system. These include the 1916 Organic Act that created the NPS, the General Authorities Act of 1970, the act of March 27, 1978 relating to the management of the national park system, and the National Parks Omnibus Management Act of 1998.

The NPS Organic Act (16 U.S. Code §1) provides the fundamental management direction for all units of the national park system, which is to:

> "Promote and regulate the use of the Federal areas known as national parks, monuments, and reservations…by such means and measures as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

The National Park System General Authorities Act (16 U.S. Code § 1a-1, et seq.) affirms that while all national park system units remain "distinct in character," they are "...united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage." The act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Further, amendments state that NPS management of park units should not "...derogate…the purposes and values for which these various areas have been established."

The NPS also has established policies for all units under its stewardship. These are identified and explained in the guidance document entitled *NPS Management Policies 2006* (NPS 2006a). The alternatives considered in this plan incorporate and comply with the provisions of these mandates and policies.

To understand the implications of an alternative, it is important to combine the service-wide mandates and policies with the management actions described in an alternative. Table 2 describes

some of the most pertinent service-wide mandates and policy topics related to planning and managing Cumberland Gap National Historical Park. Appendix B expands on this information by citing the law or policy directing these actions. The alternatives in this general management plan address the desired conditions that are not mandated by law and policy and must be determined through a planning process.

Table 2. Service-Wide Mandates and Policies Pertaining to Cumberland Gap National Historical Park

Topic	Current Laws and Policies Require that the Following Conditions Be Achieved at Cumberland Gap National Historical Park
Natural Resources	
Ecosystem Management	The park is managed holistically, as part of a greater ecological, social, economic, and cultural system.
Exotic Species	Management of populations of exotic plant and animal species, up to and including eradication, are undertaken wherever such species threaten park resources or public health and when control is prudent and feasible.
Fire Management	Park fire management programs are designed to meet resource management objectives prescribed for the various areas to ensure that the safety of firefighters and the public are not compromised. All wildland fires are effectively managed, considering resource values to be protected and firefighter and public safety, using the full range of strategic and tactical operations as described in an approved fire management plan.
Floodplains	Natural floodplain values are preserved or restored. Long-term and short-term environmental effects associated with the occupancy and modification of floodplains is avoided. When it is not practicable to locate or relocate development or inappropriate human activities to a site outside the floodplain or where the floodplain will be affected, the NPS: • Prepares and approves a statement of findings in accordance with Directors Order 77-2. • Uses nonstructural measures as much as practicable to reduce hazards to human life and property while minimizing impacts on the natural resources of floodplains. • Ensures that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 Code of Federal Regulations 60).
General Natural Resources / Restoration	Native species populations that have been severely reduced in or extirpated from the park are restored where feasible and sustainable. Populations of native plant and animal species function in as natural a condition as possible except where special considerations are warranted.
Geologic Resources/Caves/ Karst	The NPS manages caves and karst in accordance with approved cave management plans to perpetuate the natural systems associated with caves and karst. The park's geologic resources are preserved and protected as integral components of the park's natural systems.
Native Vegetation and Animals	The NPS will maintain as parts of the natural ecosystem, all native plants and animals in the park.

Table 2. Service-Wide Mandates and Policies Pertaining to Cumberland Gap National Historical Park (Continued)

Topic	Current Laws and Policies Require that the Following Conditions Be Achieved at Cumberland Gap National Historical Park
Soils	The NPS actively seeks to understand and preserve the soil resources of the park, and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of soil or its contamination of other resources. Natural soil resources and processes function in as natural a condition as possible, except where special considerations are allowable under policy.
Soundscape	Park natural soundscape resources encompass all the natural sounds that occur in parks, including the physical capacity for transmitting those natural sounds and the interrelationships among park natural sounds of different frequencies and volumes. The NPS will preserve, to the greatest extent possible, the natural soundscape of the park.
Threatened and Endangered Species	Federal and state-listed threatened and endangered species and their habitats are protected and sustained. Native threatened and endangered species populations that have been severely reduced in or extirpated from the park are restored where feasible and sustainable.
Water Resources	Surface water and groundwater are protected, and water quality meets or exceeds all applicable water quality standards. NPS and NPS-permitted programs and facilities are maintained and operated to avoid pollution of surface water and groundwater.
Viewshed and Park Resources	If the Kentucky State Cabinet determines that there would be an adverse effect of any mining permit application within 5 miles of the park or any application where any person or entity asserts that the proposed mining operation will adversely affect the park, the state provision that mirrors section 522 (e)(3) of the Surface Mining Control and Reclamation Act of 1977 would apply. The federal statute states, in part, that no operations will be permitted which will adversely affect the park unless jointly approved by the regulatory authority and the Federal and State agency with jurisdiction over the park.
Wetlands	The natural and beneficial values of wetlands are preserved and enhanced. The NPS implements a "no net loss of wetlands" policy and strives to achieve a longer-term goal of net gain of wetlands across the national park system through the restoration of previously degraded wetlands. The NPS avoids to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and avoids direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The NPS compensates for remaining unavoidable adverse impacts on wetlands by restoring wetlands that have been previously degraded.
Wilderness	The NPS ensures that wilderness characteristics and values are retained and protected; that visitors continue to find opportunities for solitude and primitive, unconfined recreation; and that signs of people remain substantially unnoticeable.

Table 2. Service-Wide Mandates and Policies Pertaining to Cumberland Gap National Historical Park (Continued)

Topic	Current Laws and Policies Require that the Following Conditions Be Achieved at Cumberland Gap National Historical Park
Cultural Resources	
Archeological Resources	Archeological sites are identified and inventoried and their National Register of Historic Places (National Register) significance is determined and documented. An archeological site is protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable. When disturbance or deterioration is unavoidable, the site is professionally documented, and mitigating measures for register-eligible sites are developed in consultation with the state historic preservation officer, American Indian tribes, and the Advisory Council on Historic Preservation (as appropriate). Mitigation may include a variety of measures ranging from avoidance to data recovery, and is generally included in a memorandum of agreement. Artifacts, materials, and records resulting from data recovery are curated and conserved as provided for in 36 Code of Federal Regulations 79. Some archeological sites that can be adequately protected may be interpreted to visitors. These requirements are specified in Director's Order 28 (NPS 1998c), which directs the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in the NPS Management Policies (NPS 2006a).
Historic Structures	Historic structures are inventoried and their significance and integrity are evaluated under National Register criteria. The qualities that contribute to the listing or eligibility for listing of historic structures on the National Register are protected in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties (36 Code of Federal Regulations 68).* However, if it is determined through a formal process that disturbance or natural deterioration is unavoidable, mitigation measures and consultation are initiated as described for archeological resources, above.
Museum Collections	Museum collections such as artifacts, specimens, field notes, and manuscripts are documented, inventoried, catalogued, preserved, and protected, and provision is made for access to them and for their use in exhibits, research, and interpretation. As appropriate, the NPS will consult with culturally affiliated or traditionally associated peoples before treating or reproducing items in NPS collections that are subject to the Native American Graves Protection and Repatriation Act. The qualities that contribute to the significance of collections are protected in accordance with established standards as defined in the NPS *Museum Handbook* and 36 Code of Federal Regulations 79.

Table 2. Service-Wide Mandates and Policies Pertaining to Cumberland Gap National Historical Park (Continued)

Topic	Current Laws and Policies Require that the Following Conditions Be Achieved at Cumberland Gap National Historical Park
Cultural Landscapes	Cultural landscape inventories are conducted to identify landscapes potentially eligible for listing in the National Register, and to assist in future management decisions for landscapes and associated resources, both cultural and natural. The management of cultural landscapes is guided by a Cultural Landscapes Report that focuses on preserving the landscape's physical attributes, biotic systems, and use when that use contributes to its historical significance. The preservation, rehabilitation, restoration, or reconstruction of cultural landscapes is undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes, and 2006 Management Policies 5.3.5.2*.
Ethnographic Resources	Appropriate cultural anthropological research is conducted in cooperation with groups associated with the park The NPS accommodates access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of these sacred sites. NPS general regulations on access to and use of natural and cultural resources in the park are applied in an informed and balanced manner that is consistent with the park's purposes and does not unreasonably interfere with American Indian use of traditional areas or sacred resources and does not result in degradation of park resources. American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony, and associated funerary objects are consulted when such items may be disturbed or are encountered on Cumberland Gap National Historical Park lands. Access to sacred sites and park resources by American Indians continues to be provided when such use is consistent with park purposes and protection of resources. All ethnographic resources determined eligible for listing or listed on the National Register are protected. If disturbance of such resources is unavoidable, formal consultation with the state historic preservation officer(s), with the Advisory Council for Historic Preservation (as appropriate), and with American Indian tribes is conducted. This consultation is in accordance with the National Historic Preservation Act and the Advisory Council for Historic Preservation implementing regulations (36 Code of Federal Regulations 800) and the programmatic agreement among the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. All agencies are required to consult with tribal governments before taking actions that affect federally recognized tribal governments. These consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals. The identities of community consultants and information about sacred and other culturally sensitive places and practices are kept confidential when research agreements or other circumstances warrant.

Table 2. Service-Wide Mandates and Policies Pertaining to Cumberland Gap National Historical Park (Continued)

Topic	Current Laws and Policies Require that the Following Conditions Be Achieved at Cumberland Gap National Historical Park
Visitor Use and Experience	
Visitor Use and Experience	Park resources are conserved "unimpaired" for the enjoyment of future generations. Visitors have opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the park. No activities occur that would cause derogation of the values and purposes for which the park has been established. For all zones, districts, or other logical management divisions within the park, the types and levels of visitor use are consistent with the desired resource and visitor experience conditions prescribed for those areas. Park visitors will have opportunities to understand and appreciate the significance of the park and its resources, and to develop a personal stewardship ethic. To the extent feasible, programs, services, and facilities in the park are accessible to and usable by all people, including those with disabilities.
Public Health and Safety	Management policies of the NPS require the agency to provide a safe and healthy environment within the park boundaries. The Council on Environmental Quality regulations require consideration of public health and safety as part of the National Environmental Policy Act process.
Other Topics	
Transportation to and within the Cumberland Gap National Historical Park	Visitors have reasonable access to the park, and there are connections from the park to regional transportation systems as appropriate. Transportation facilities provide access for the protection, use, and enjoyment of park resources. These facilities are required to preserve the integrity of the surroundings, respect ecological processes, protect park resources, and provide the highest visual quality and a rewarding visitor experience. The NPS participates in all transportation planning forums that may result in links to the park or impact park resources. Working with federal, tribal, state, and local agencies on transportation issues, the NPS seeks reasonable access to the park and connections to external transportation systems.
Utilities and Communication Facilities	Park resources or public enjoyment of the park are not denigrated by nonconforming uses. Telecommunication structures are permitted in the park to the extent that they do not jeopardize the park's mission and resources. No new nonconforming use or rights-of-way are permitted through the park without specific statutory authority and approval by the director of the NPS or his/her representative, and are permitted only if there is no practicable alternative to such use of NPS lands. Requests to cite non-NPS telecommunication antennas and related facilities on NPS lands are required to be considered in accordance with the Telecommunications Act of 1996 (47 U.S. Code 332).

Table 2. Service-Wide Mandates and Policies Pertaining to Cumberland Gap National Historical Park (Continued)

Topic	Current Laws and Policies Require that the Following Conditions Be Achieved at Cumberland Gap National Historical Park
Relations with Private and Public Organizations, Owners of Adjacent Land, and Governmental Agencies	The park is managed as part of a greater ecological, social, economic, and cultural system. Good relations are maintained with adjacent landowners, surrounding communities, and private and public groups that affect, and are affected by, the park. The park is managed proactively to resolve external issues and concerns and ensure that park values are not compromised. The NPS works cooperatively with others in the region to anticipate, avoid, and resolve potential conflicts, protect park resources, and address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, neighboring landowners, and all other concerned parties.
Government-to-Government Relations between American Indian Tribes and Cumberland Gap National Historical Park	The NPS and tribes culturally affiliated with the park maintain positive, productive, government-to-government relationships. Park managers and staff respect the viewpoints and needs of the tribes, continue to promptly address conflicts that occur, and consider American Indian values in park management and operation. In accordance with the Presidential Memorandum of April 29, 1994, and Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), the Service will maintain a government-to-government relationship with federally recognized tribal governments. This means that NPS officials will work directly with appropriate tribal government officials whenever plans or activities may directly or indirectly affect tribal interests, practices, and/or traditional use areas such as sacred sites.

BOUNDARY ADJUSTMENTS

As part of general management planning, the NPS is required to identify and evaluate boundary adjustments that may be necessary or desirable to carry out the purposes of the park. Boundary adjustments may be recommended to:

- Protect significant resources and values, or to enhance opportunities for public enjoyment related to park purposes,
- Address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineations such as topographic or other natural features or roads, or
- Otherwise protect park resources that are critical to fulfilling park purposes.

All recommendations for boundary changes must meet the following two criteria:

- The added lands will be feasible to administer considering their size, configuration, and ownership; costs; the views of and impacts on local communities and surrounding jurisdictions; and other factors such as the presence of hazardous substances or exotic species;
- Other alternatives for management and resource protection are not adequate.

The park is authorized to include up to 50,000 acres, with exceptions as identified in the park's legislation (see *Special Mandates and Administrative Commitments* section). The existing boundary includes some 24,531 acres. Therefore, additional acquisitions from willing sellers or donations are

possible. The acquisition of Fern Lake and surrounding acreage (approximately 600 acres) is on-going, and would complete the park's goal of protecting the remaining portions of Fern Lake Watershed. This acquisition is in compliance with the Fern Lake Conservation and Recreation Act of 2001 (Appendix A).

RELATIONSHIP OF OTHER PLANNING EFFORTS TO THIS GENERAL MANAGEMENT PLAN

The park values its relationships with the communities and state lands in the vicinity of the park as well as the region in which it is located. Several plans have influenced or would be influenced by the approval of the General Management Plan. These relevant park and other plans and studies are listed below.

National Park Service Plans

Cave Management Plan: A *Cave Management Plan* for Gap Cave was completed in 1998 (NPS 1998b) to address long-range planning issues relating to the management of this resource in the park. The plan included a summary of the significance of Gap Cave in the park, recommended cave management approaches, an assessment of interpretation, visitor use and visitor services relative to the cave, a description of cave facilities operations, and other aspects of cave management in the park. This General Management Plan is consistent with the *Cave Management Plan*.

Commercial Services Plan: Commercial visitor services planning is required under Management Policies 2006 to identify the appropriate role of commercial operators in helping parks to provide opportunities for visitor use and enjoyment. A park commercial services strategy is required to ensure that concession facilities and services are necessary and appropriate, financially viable, and addressed in an approved plan. A commercial Services Plan was prepared in 2001 for the park (NPS 2001a) and is in the process of being updated as part of this General Management Plan.

Farm Management and Interpretive Plan, Hensley Settlement: This original plan was prepared in 1972 (NPS 1972) and was updated in 1982 (NPS 1982). No substantial changes were made in management policy, interpretation, or farm management practices. The plan contains a description of the settlement and summaries of management practices and exhibits. The revised plan created a new objective of making the settlement as productive as possible to help defray operating costs. The majority of these costs are related to maintaining the historic landscape and structures. This General Management Plan identifies the desire to continue to provide commercial services for Hensley Settlement, and the desire for interpretive activities to be maintained or increased, which is consistent with the *Farm Management and Interpretive Plan*.

Fire Management Plan: Fire management plans are fundamental strategic documents that guide the full range of fire management related activities permitted by policy. They are required by the NPS Director's Order 18 (NPS 1998b) which says: "Every park area with burnable vegetation must have a fire management plan approved by the Superintendent," and the 2001 Federal Wildland Fire Management Policy (2001 Federal Fire Policy), which states: "Complete, or update, Fire Management Plans for all areas with burnable vegetation." According to Director's Order 12, each NPS unit is required to review and update their Fire Management Plan annually with major review and revisions every five years. The park completed a plan in 2003 (NPS 2003c) that included the following elements: a description of the park, fire background information, fire pre-suppression, emergency fire pre-suppression, fire suppression mobilization, public relations, and legal responsibilities.

The objectives of the plan were to:

- Establish a fire organizations and assign responsibility to park personnel;
- Outline procedures in the event of a wildfire;

- Provide for dissemination of information to the public on fire management actions at the park;
- Identify legal responsibilities and develop actions for compliance.

The park is required to update the 2003 Fire Management Plan, which will be completed during the next planning period. Since the original plan, the park has been working as part of the NPS Fire Use Module to manage fires in the park. The Fire Use Module is a team of experienced and trained fire personnel committed to fire use operations and planning at the national level. Fire use is a combination of prescribed fires and wildland fire applications used to meet resources management objectives. Prescribed fires in parks manage landscapes, and reduce hazardous fuel loads near developed areas, and restore fire as a natural process in the ecosystem. The park successfully initiated its prescribed fire program in 2005 by completing two burns. The actions proposed under this General Management Plan are consistent with the *Fire Management Plan*.

Other Plans

Kentucky Wildlife Management Areas and State Natural Areas: This General Management Plan does not conflict with the management objectives of neighboring wildlife management and natural areas. The Shillalah Creek Wildlife Management Area and Martins Fork Wildlife Management Area and State Natural Area border the park and their management objectives are described below. The park continues to coordinate regarding trail connectivity and use as well as other concerns.

Shillalah Creek Wildlife Management Area: The Shillalah Creek Wildlife Management Area consists of two tracts (2,140-acre Brush Mountain tract, and 500-acre Shillalah Creek tract) that share the northeastern border of the park (KYDFWR 2005). The management objectives of Shillalah Creek Wildlife Management Area are (KYDFWR 2005):

- To manage wildlife areas toward the creation, enhancement, and sustainability of permanent wildlife habitats and populations
- To manage areas for the preservation and enhancement of public outdoor recreational opportunities
- Restore wildlife species to their natural habitats
- To provide opportunities for fish and wildlife education
- To provide demonstrations of sound wildlife management practices

Martins Fork Wildlife Management Area and State Natural Area: Martin's Fork Wildlife Management Area and State Natural Area protects the Martin's Fork of the Cumberland River, a scenic high-quality mountain stream that originates in Cumberland Gap National Historical Park (KSNPC 2008). The river was added to the preserve system on March 8, 2006, and protected under the Kentucky Wild Rivers Act of 1972 (KSNPC 2008). The Wild Rivers System recognizes rivers that retain many of their natural attributes and protects them from unwise use and development (KYDEP Division of Water 2009). The area consists of a 1,601-acre site located on Cumberland and Brush mountains in Harlan County. Management of this site is shared between the Kentucky Division of Water Wild Rivers Program, the Kentucky Department of Fish and Wildlife Resources and the Kentucky State Nature Preserves Commission (KSNPC 2008). The area will be open for hiking, nature study, and wildlife-related recreation, including hunting in accordance with regulations established by Kentucky Department of Fish and Wildlife Resources; however, access will be limited to foot traffic only (KSNPC 2008).

County and Regional Plans

Not all counties in the vicinity of the park have comprehensive or land use management plans. Lee County, Virginia has a comprehensive plan, as well as land use zoning throughout the county. Approximately 95 percent of the county is zoned as agricultural. Most of the property adjacent to the park is zoned as agricultural, but some of the land along U.S. 58 is zoned for residential, commercial, and manufacturing. Lee County officials indicate that the improvement of U.S. 58 could encourage additional development along the corridor near the park (Lee County 2004). Bell (Kentucky), Harlan (Kentucky), and Claiborne (Tennessee) Counties have no zoning and no comprehensive plans. However, the State of Tennessee has prepared growth studies for Claiborne County. Middlesboro (Kentucky), Harrogate (Tennessee), and the Town of Cumberland Gap (Tennessee) have land use zoning but no comprehensive plan. Zoning in these communities is mainly residential and commercial, with limited industrial areas. The management zones and actions proposed in this *General Management Plan* include continued outreach, interpretive activities, special events and other actions that do not conflict with local and regional plans identified.

PLANNING ISSUES AND CONCERNS

Introduction

During the scoping process, or early information gathering phase of work for this general management plan, the general public, NPS staff (with their knowledge about past planning efforts), representatives from other county, state, and federal agencies, and representatives from various organizations, identified various issues and concerns. An issue is defined as an opportunity, conflict, or problem regarding the use or management of public lands. Comments were solicited at internal park meetings, public meetings, through planning newsletters, and on the Cumberland Gap National Historical Park's website (refer to Chapter 5 "Consultation and Coordination").

Comments received during scoping demonstrated that the public generally approves of the management, use, and facilities at the Cumberland Gap National Historical Park. While many of the comments were positive regarding park facilities and management practices, there were also several suggestions for improvement. The most prevalent issues identified by all involved entities during scoping were used in developing alternatives for the general management plan. These issues fell into five broad categories, summarized below.

- **Education, Communication, Outreach:** A number of commenters expressed a desire for more and different types of education, communication, and outreach activities. Several comments focused on more outreach and activities at the Hensley Settlement as well as more frequent organized events. In addition, there is an expressed desire to include educational and interpretive activities at Fern Lake, as well as an overall increase in interpretive activities such as covered wagon rides, guided tours, programs, demonstrations, and special events in the park. Information could also be shared through improved signage.
- **Partnering:** Working with partners is beneficial to maximize services as well as assist in areas of over-extended funding and staffing constraints. A number of ways in which the park could partner with other entities include working with the Town of Cumberland Gap, Tennessee and other local communities; maintaining existing partnerships with state and local parks, caving organizations, trail organizations as well as identifying other new partners..
- **Increased Access:** Many commenters identified a need for increased access to important resources within the park and to nearby resources outside the park, while simultaneously protecting resources. Areas identified for varying types of access include Hensley Settlement, mountain top areas (for example, for activities such as rock climbing and rappelling), trails (including increased connectivity between trails inside the park and external connectivity with

trails outside the park boundaries), and Fern Lake. Access in the park could be expanded through construction of additional facilities, including roads, horse trails and accommodations at the campground, bicycle and hiking trails, and satellite/trailhead parking areas, and visitor contact stations. Signage for roads and trails could be improved. The use of concessioners and commercial services is also a means of providing additional access and guided tours. The opportunity for participating in guided tours also addresses trail safety concerns by providing visitors the additional choice of guided trail use.

- **Protection of Resources:** The public expressed the desire to provide increased access to the park while at the same time protecting natural and cultural resources. In general, specific mention of the following resources was identified: protection of Fern Lake watershed, public water supply, and scenic qualities; protection of the viewshed; the Hensley Settlement; and continued protection of wilderness.
- **Socioeconomics:** There was interest expressed in using the park as a catalyst for bringing more people and business into the tri-state area. Getting visitors to stay longer in the area was also identified as an overall economic goal for the region. Some aspects of these concerns are considered outside the influence of the park, as the economic activity of the local area is not inherent to the park's mission or purpose. The park, however, recognizes the importance of the role it plays in the local economy. The socioeconomic issues tied to management actions proposed in this plan include those related to partnering, and increasing the levels of partnering and outreach to raise awareness of the park, and conducting additional outreach and educational activities.

DECISION POINTS

As with any decision-making process, there are key decisions that, once made, will dictate the direction of subsequent decisions. Based on public comments and issues and NPS concerns, three decision points were identified. This general management plan focuses on alternative ways of addressing these decision points.

- How much can the park increase visitor access through improved facilities (including hiking and horseback trails, roads, parking areas, visitor contact stations, campground) and still allow for protection of natural and cultural resources? This decision point relates to each of the impact topics identified under the natural resources and cultural resources sections; and visitor use and experience; transportation and; park operations.
- Should education and outreach programs be expanded or kept at current levels? This decision point relates to the following impact topics: natural and cultural resources; park operations; visitor use and experience; concessions and commercial services.
- Should partnering programs be expanded or kept at current levels? This decision point relates to the following impact topics: visitor use and experience; socioeconomics; park operations.

ISSUES AND CONCERNS NOT ADDRESSED IN THE GENERAL MANAGEMENT PLAN

Not all issues or concerns raised by the public are included in this general management plan. Some issues raised by the public were not considered because they:

- Are already prescribed by law, regulation, or policy;
- Would be in violation of laws, regulations, or policies;
- Were at a level that was too detailed for a general management plan and are more appropriately addressed in subsequent planning documents.

This section briefly describes these issues and the basis for excluding them from this general management plan. The following concerns were identified during public scoping. The rationale for not addressing each issue or comment is italicized for each topic identified:

- The park should provide more information on the connection of the general management plan process to the environmental impact statement / National Environmental Policy Act process. (*This Draft General Management Plan/Environmental Impact Statement documents the National Environmental Policy Act process.*)
- The park should provide a means for the public to view other people's comments. (*A summary of the comments are available from the park.)*
- Controlled burns should be continued in the park to reduce the likelihood of wildfire. *(Controlled burns as part of the park's Wildlands/Urban Interface program. These fires are directed toward reducing the fuel loading in the park. Fire management practices are addressed through another plan – Fire Management Plan/Environmental Assessment.)*
- Invasive plants are a problem in the park. Even if the park eradicated all invasive plants, they would still continue to invade from the surrounding areas. For instance, privet and honeysuckle could have a major effect on the park even if they are controlled. (*The park addresses the control of exotic species via its existing resource management plan. The park is also part of the NPS Biological Resources Management Division Southeast Exotic Plant Management Team, which is responsible for assessing and managing invasive species.)*
- Cumberland Gap National Historical Park is oriented along the crest of the Cumberland Mountain; it is obvious that the park should be oriented south-to-north, following its original design. (*The boundaries of the park were established by Congress in 1940. The orientation of the park will not change.)*
- Would a chair lift to the top of the mountain be possible or a train ride through the park, including a railroad tunnel under the Gap? (*These types of facilities would not be considered appropriate within the national park as it is not relevant to its mission or purpose and would interfere with the scenic viewshed.*)
- A bicycle/pedestrian path should be provided through the Gap tunnel. *(This type of activity would not be consistent with State and or Federal highway regulations. The safety concerns involved with bicycle/pedestrian access through the tunnel prohibit such use.)*
- The public would like to see a European style time-trial car rally up to the Pinnacle. (*This would be considered a commercial venture; the NPS cannot allow charging for such an activity within the National Park.)*
- There are no Wildlife Management Areas in Lee County. People hunt right up to the park boundary. (*No hunting is allowed within the park boundaries. This is regulated under 36 Code of Federal Regulations 2.2. The NPS cannot regulate hunting outside the park boundaries.)*
- The park should provide financial assistance to neighboring communities and their citizens. (*This is not within the purview of the NPS. The park is committed to partner with local communities for opportunities to advance economic gain in the form of commercial services where appropriate in the park.)*
- The topic of dam safety was raised during public meetings. *(The integrity and monitoring of the dam at Fern Lake will be addressed during and after acquisition. The NPS will provide safe operating conditions within the park; this is considered a "must.")*
- The park should provide brochures to inform visitors regarding activities and features of the park. (*The park will address this through its operating procedures at the visitor center and points of contact.)*

- The park needs various cosmetic changes to improve its appearance. (*Several improvements projects have been completed recently including the Skyline Road improvement, the Civic Park improvements, Hensley Settlement restoration, and the Daniel Boone Wilderness Road facility.)*
- The wilderness area in the park should be formally designated as a Wilderness area. (*A Wilderness Recommendation Study was completed for Cumberland Gap as required by the Wilderness Act of 1964 (16 United States Code, 1131-1136). On September 21, 1972, the President recommended to Congress that areas within Cumberland Gap National Historical Park be designated as wilderness and potential wilderness. A revised wilderness recommendation was submitted to Congress in January, 1978. NPS policy requires that a wilderness study area be managed to ensure the wilderness suitability of the area is not impaired until congress has completed its decision-making on whether to designate wilderness. As such, the area is currently managed pursuant to Section 6 of NPS Management Policies 2006. The Recommended Wilderness and Potential Wilderness areas of the park are addressed in this plan as Recommended Wilderness).*
- The park requires more frequent maintenance than is currently administered. (*The park addresses this through its staffing, planning, and normal operating procedures*.)
- The park should provide playgrounds for children. (*Playgrounds are considered to be an appropriate potential future facility, pending an assessment of effects on safety, natural and cultural resources, and visitor experience.)*

IMPACT TOPICS – RESOURCES AND VALUES AT STAKE IN THE PLANNING PROCESS

The Council on Environmental Quality guidelines for implementing the National Environmental Policy Act require that the description of the affected environment must focus on describing the resources and people that might be affected by implementation of the alternatives. Preliminary impact topics were developed to provide a focus for the environmental analysis and to ensure that relevant topics were addressed for each alternative. Impact topics were identified based on federal laws and other legal requirements, the Council on Environmental Quality guidelines, NPS *Management Policies 2006*, NPS subject-matter expertise and knowledge of limited or easily impacted resources, and issues/concerns expressed by other agencies or the public during initial project scoping.

The complete list of preliminary impact topics are summarized in Table 3. Some of the impact topics in Table 3 were dismissed after careful consideration of their potential environmental effects, and others were retained for further analysis in the impact section of the general management plan. A brief rationale for retaining or dismissing each impact topic is provided in the text that follows.

Table 3. Impact Topics Considered and Relevant Regulations or Policies

Impact Topic	Retained or Dismissed	Relevant Regulations or Policies
Geological – Cliffs, Caves and Karst	Retained	NPS *Management Policies 2006*, Sections 4.8.1, 4.8.2, 2006; Federal Caves Resource Protection Act of 1988; National Historic Preservation Act of 1966 (PL 89-665); Archeological Resources Protection Act of 1974 (PL 93-291); 1906 Antiquities Act (PL 59-209); Wilderness Act (PL 88-577); NPS -14, Cave Radiation Safety and Occupational Health Guideline.
Soils	Retained	NPS *Management Policies 2006*, Section 4.8.2.4; 1981 Farmland Protection Policy Act PL 97-98.
Water Quality	Retained	Executive Order 12088; Executive Order 11990; NPS *Management Policies 2006*, Sections 4.6.3, 2001; Federal Water Pollution Control Act [The Clean Water Act of 1972 (as amended in 1977)];
Fisheries/ Aquatic Resources	Retained	NPS *Management Policies 2006*, Section 4.4; Federal Water Pollution Control Act [The Clean Water Act of 1972 (as amended in 1977)]; Magnuson-Stevens Fishery Conservation and Management Act
Wetlands	Retained	Executive Order 11988; Floodplain Management; NPS Director's Order 77-2; NPS *Management Policies 2006,* Section 4.6.4 and 4.6.5. Executive Order 11990; Clean Water Act Section 404; NPS Director's Order #77-1; Executive Order 11988;
Vegetation –Native Plant Communities	Retained	NPS *Management Policies 2006*, Section 4.4.2.
Species of Special Concern	Retained	Endangered Species Act of 1973; NPS *Management Policies 2006*, Section 4.4.2.3; 40 Code of Federal Regulations 1500 (regulations for implementing the National Environmental Policy Act); State of Kentucky, Tennessee and Virginia regulations for state-listed species, and Natural Heritage Program listings for the same three states.
Soundscape	Retained	NPS *Management Policies 2006,* Section 4.9 and Director's Order 47, "Soundscape Preservation and Noise Management"
Cultural Resources – Archeological Resources	Retained	40 Code of Federal Regulations 1500 (regulations for implementing the National Environmental Policy Act); NPS Director's Order #12; Section 106 of the National Historic Preservation Act; 36 Code of Federal Regulations 800; NPS Management Policies 2006-Chapter 5; NPS Director's Order 28: Culture Resource Management Guidelines
Cultural Resources – Cultural Landscapes, Including Historic Buildings, Structures and Districts	Retained	40 Code of Federal Regulations 1500 (regulations for implementing the National Environmental Policy Act); NPS Director's Order #12; Section 106 of the National Historic Preservation Act; 36 Code of Federal Regulations 800 (Protection of Historic Properties); NPS *Management Policies 2006*-Chapter 5; NPS Director's Order 28: Cultural Resource Management Guidelines

Table 3. Impact Topics Considered and Relevant Regulations or Policies (Continued)

Impact Topic	Retained or Dismissed	Relevant Regulations or Policies
Cultural Resources – Ethnographic Resources, Including Traditional Cultural Properties, and Values	Retained	NPS *Management Policies 2006,* Section 5.3.5.3 and Cultural Resource Guideline Director's Order 28
Socioeconomics	Retained	National Environmental Policy Act
Visitor Use and Experience	Retained	The Organic Act and NPS *Management Policies 2006,* Section 8.2
Scenic Resources and Visual Quality	Retained	NPS *Management Policies 2006*, Sections 1.4, 4.7, and 4.10
Transportation	Retained	NPS *Management Policies 2006,* Section 9.2.
Park Operations	Retained	NPS *Management Policies 2006,* Sections 8.1 and 9.1.
Concessions and Commercial Services	Retained	NPS *Management Policies 2006,* Sections 10.2 and 10.3.
Ecologically Critical Areas, Wilderness, or Other Unique Natural Resources	Partially Retained (Wilderness is addressed)	NPS *Management Policies 2006*, Sections 4.3 and 6; Wilderness Act of 1964; Director's Order 41: Wilderness Preservation and Management
Public Health and Safety	Dismissed (Addressed under impact topics: transportation ; park operations; and water quality)	NPS *Management Policies 2006,* Section 8.2.5.
Water Rights/Quantity	Dismissed	NPS *Management Policies 2006*, Section 4.6.
Prime or Unique Farmlands	Dismissed	NPS *Management Policies 2006*, Section 4.6. 1981 Farmland Protection Policy Act PL 97-98.
Wildlife	Dismissed	NPS *Management Policies 2006*, Section 4.4; Migratory Bird Treaty Act
Land Use	Dismissed	National Environmental Policy Act, NPS *Management Policies 2006*.

Table 3. Impact Topics Considered and Relevant Regulations or Policies (Continued)

Impact Topic	Retained or Dismissed	Relevant Regulations or Policies
Public Services and Utilities	Dismissed	NPS *Management Policies 2006,* Section 9.1.
Environmental Justice	Dismissed	Executive Order 12898
Air Quality	Dismissed	NPS *Management Policies 2006*, Section 4.7; and Clean Air Act 1963 (as amended 1977 and 1990)
Other Geological Resources	Dismissed	The Organic Act and NPS *Management Policies 2006,* Section 4.8.
Hazardous Materials	Dismissed	NPS *Management Policies 2006,* Section 9.1.6.
Wild and Scenic Rivers	Dismissed	National Wild and Scenic River Act Public Law 90-542
Paleontological Resources	Dismissed	The Organic Act and NPS *Management Policies 2006,* Section 4.8.2.
Indian Trust Resources	Dismissed	Secretarial Order 3175 and NPS *Management Policies 2006,* Section 1.11.
Natural Lightscape	Dismissed	NPS *Management Policies 2006,* Section 4.10.
Energy Requirements and Conservation Potential, Sustainable Design	Dismissed	NPS *Management Policies 2006,* Section 9.1.

Impact Topics Retained for Further Analysis

The following impact topics as identified on Table 3, have been retained for further analysis in the environmental impact assessment. The rationale for retaining each impact topic is also provided.

Geological – Cliffs, Caves, and Karst: Caves feature one of the most important natural and cultural resources in the park. Caves could be affected by the management alternatives by changing use patterns by visitors, including caving organizations interested in partnering with the NPS. Therefore, this impact topic was retained.

Several large cliff systems occur in the park and could be affected in the future by visitor activities or park actions. The most notable cliffs are the White Rocks, located in the northeastern end of the park near Ewing, Virginia. Therefore, cliffs have been included as part of this impact topic.

Karst features such as sinkholes occur in the park, but are less likely to be affected by visitor activities or park actions. However, because caves are considered to be part of the karst system of the park, karst features are included.

Soils: Construction of facilities proposed by the various management alternatives could potentially affect soil within the Cumberland Gap National Historical Park, with associated effects on water quality and aquatic life. Therefore, this impact topic was retained.

Water Quality: The park contains numerous streams that originate on Cumberland and Brush Mountain, and other streams that are part of the Fern Lake watershed. Soil disturbance resulting from park use and construction projects has a potential to affect water quality by causing soil erosion. Continued protection of public drinking water supply was a concern. Therefore, this impact topic was retained.

Fisheries/Aquatic Resources: Alternatives have the potential to affect water quality which can in turn affect aquatic life and fisheries in streams originating on Cumberland or Brush Mountains, and the Fern Lake watershed. Therefore, this impact topic was retained.

Wetlands: A variety of wetlands occurs throughout the park and could potentially be affected by park operations. Developments or other management actions could affect wetlands. Therefore, wetlands were retained as an impact topic.

Vegetation – Native Plant Communities: Vegetation at Cumberland Gap National Historical Park is in a mature, largely natural state, including approximately 14,091 acres of wilderness. Potential construction activities associated with the alternatives could affect natural vegetation. Therefore, the impact topic of vegetation was retained.

Species of Special Concern: A variety of federal- and state-listed rare, threatened or endangered species of plants and animals occurs in the Cumberland Gap National Historical Park. In addition, a large number of species of plants and animals are listed by each state's Natural Heritage Programs. The management alternatives could potentially affect these species. Therefore, this impact topic was retained.

Historic Structures and Cultural Landscapes: The Hensley Settlement Historic District, the Cumberland Gap Historic District, and other cultural resources could be affected by the action alternatives. Therefore, this impact topic was retained.

Ethnographic Resources: The impact topic of ethnographic resources was retained because former park residents and their descendents retain a strong and continuing attachment to the land and its resources. They have a long-term stake in the integrity of park resources with which they were associated. The remembered lifeways of their parents and grandparents form a microcosmic view of Appalachian culture. Therefore, this impact topic was retained.

Socioeconomics: Tourism is very important to this tri-state region. The additional visitor amenities provided in the management alternatives could increase visitation to the park and encourage visitors to spend more time in the area. The management alternatives could also affect the potential for concession operations in the park. In addition, the new facilities at the park could be constructed by local firms which could enhance the local economy. Therefore, this impact topic was retained.

Visitor Use and Experience: Frequent scoping comments identified the value visitor's place on protecting the park's natural and cultural resources while providing access. Visitor use and experience would be altered in certain areas of the park under the different management alternatives proposed. Therefore, this impact topic was retained.

Scenic Resources and Visual Quality: The view from the Pinnacle is a much valued park experience, as are many other scenic resources. The alternatives provide different approaches for managing the park, with varied facilities that could be constructed. These actions could affect scenic resources. Therefore this impact topic was retained.

Transportation: Access to various locations in the park differs across alternatives, with varying impacts. Therefore, this impact topic was retained.

Soundscape: The proposed Developed Zone in the management alternatives could result in an increase in noise produced by people due to increased visitation and maintenance activities and a reduction of natural sounds. Therefore, this impact topic was retained.

Park Operations: The management alternatives feature additional park interpretive and other services and/or maintenance operations in areas with increased activities. Therefore, this impact topic was retained.

Concessions and Commercial Services: There are no concessions operating in the park, however, opportunities for concessions are provided under the action alternatives proposed. For example, concession opportunities would be possible at Fern Lake and potentially at the Hensley Settlement. Therefore, this impact topic was retained.

Impact Topics Dismissed From Further Analysis

Some impact topics that are commonly considered during the planning process were not relevant to the development of this general management plan for Cumberland Gap National Historical Park due to the following: (a) implementing the alternatives would have no effect or a negligible effect on the topic or resource or (b) the resource does not occur in the park. These topics, along with the rationale for dismissal, are described as follows:

Floodplains: A review of Federal Insurance Rate Maps issued by the Federal Emergency Management Agency showed that the only federally designated 100-year floodplain in the park is associated with Fern Lake. Construction of new facilities would be designed to be located outside this zone, using Federal Emergency Management Administration Maps. The alternatives would, therefore, not affect 100-year floodplains. Therefore, floodplains were not retained as an impact topic.

Prime or Unique Farmlands: The Farmland Protection Policy Act and the U.S. Department of the Interior require an evaluation of impacts on prime or unique farmlands. These lands require certain soil types and water availability. While much of the park is mountainous, there are areas in the park that contain prime or unique farmland. In fact, there are approximately 160 acres of soil types designated as prime farmland located in the park (Appendix C). There is no soil designated as unique farmland located in the park. The prime farmland is not concentrated in one area, but is scattered in several locations throughout the park. Most of the prime farmland is located in the developed zone located near the visitor center, the Wilderness Road Campground, and at the east end of Fern Lake, and appears to have already been affected by previous construction activities to some extent. Those areas currently developed with roads or structures no longer qualify as prime farmland, and future development could occur on those sites with no further review on effects on prime farmland. Areas that are not currently developed with roads or other structures could qualify as prime farmland and would require further coordination with the National Resource Conservation Service if development is proposed for those sites in the future. Specific projects would be evaluated in detail when proposed, and effects would be avoided or minimized as required. For these reasons, prime or unique farmland was dismissed from further evaluation in this document.

Wildlife: The park has extensive areas of wilderness and relatively undisturbed wildlife habitat. However, none of the proposed management actions under any of the alternatives would have more than a negligible effect on wildlife in the park. Therefore, the impact topic of wildlife was dismissed.

Land Use: The Cumberland Gap National Historical Park is located in a generally rural part of Virginia, Tennessee, and Kentucky. Only the extreme western portion of the existing park is located contiguous to urban land uses outside the park. This western portion of the park is located

next to the communities of Middlesboro, Kentucky and Cumberland Gap, Tazewell, and Harrogate, Tennessee. Lincoln Memorial University is also located adjacent to the park in Tennessee. The western portion of the park also contains the most developed areas of the park, including the Visitor Center, the Wilderness Road campground, the Daniel Boone Visitor Contact Center, and the Pinnacle. The remainder of the park contains primarily areas designated as Recommended Wilderness Zone and Natural Zones, and these areas are primarily surrounded by rural land use outside of the park. As a result, the park has very few land use compatibility problems. Forested land generally provides a buffer between activity center areas both in the park and outside the park, allowing both park activities and outside activities to occur with minimal disruption from the other source.

Lee County has a comprehensive plan, as well as zoning throughout the county. Approximately 95 percent of the county is zoned as agricultural. Most of the property adjacent to the park is zoned as agricultural, but some of the land along U.S. 58 is zoned for residential, commercial, and manufacturing. Lee County, Virginia officials indicated that the improvement of U.S. 58 could encourage additional development along the corridor near the park (Lee County 2004). Middlesboro, Harrogate, and the town of Cumberland Gap have land use zoning but no comprehensive plan. The zoning in the communities is mainly residential and commercial, with limited industrial areas. Bell, Harlan, and Claiborne Counties have no zoning and no comprehensive plans. However, the state has prepared some growth studies for Claiborne County.

Management alternatives generally include increased acreage of developed zone between Alternative A, Alternative B, and Alternative C. The added developed zone at Hensley Settlement is interior to the park and would not affect surrounding land uses. The increased developed zone near the Wilderness Road Campground, the visitor center, and Fern Lake is adjacent to the urban areas of the town of Cumberland Gap, Tennessee and the city of Middlesboro, Kentucky and would have a negligible effect on the surrounding land use and the land use plans for those areas. The park would continue to work with the local communities to ensure that compatible land uses are approved and constructed on properties located adjacent to the park. For these reasons, land use was dismissed from further evaluation.

Public Services and Utilities: The Fern Lake Company is the water supply for Middlesboro. This water is supplied from Fern Lake and the city pays approximately $100,000 annually for the water rights. The city contracts with the Kentucky Water Service Corporation to supply water to Middlesboro. Water service is also extended beyond the Middlesboro city limits to Noetown, Evans Drive, Lake Hill, and Junction in the unincorporated area of Bell County (Water Service Corporation of Kentucky 2006). Middlesboro also provides water to the Cumberland Gap tunnel and sections of the Cumberland Gap National Historical Park, including the visitor center and headquarters. The City of Middlesboro provides sewer services to the park and the Cumberland Gap tunnel.

The public services required by the park would be similar under all alternatives. There would be a negligible difference in the demand for electricity, water, and sewer services between the various alternatives and the overall demand on these services would be rather minimal on a regional scale. Fern Lake's function as the City of Middlesboro water supply is discussed in several other sections, including water quality and public health and safety. For these reasons, the impact topic of public services and utilities was dismissed from further consideration.

Public Health and Safety: Public health and safety is addressed under other impact topics. The "Transportation" impact topic includes a discussion of tunnel safety as well as other transportation-related concerns. Water quality of the drinking water supplies is addressed in the

"Water Quality" impact topic. Enforcement activities with related safety concerns are included under the "Park Operations" impact topic.

Water Rights/Quantity: Fern Lake is the water supply for Middlesboro, Kentucky. However, none of the alternatives would affect the quantity of water supply from Fern Lake provided to the City of Middlesboro.

Gap Cave also serves as a water supply for the area. When Gap Cave was transferred to the NPS in 1992, Lincoln Memorial University retained the water rights to the cave. The University maintains water collection equipment and pumps inside Gap Cave. Water is pumped from the cave to the university and the university also sells the water to the Town of Cumberland Gap, Tennessee, and also to the Coca Cola Company, which bottles and sells water from the cave under the label "Cumberland Gap Mountain Spring Water," The Coca Cola bottling operation is located in Middlesboro. None of the management alternatives would affect water rights or the way water is supplied from Gap Cave. Therefore, the impact topic of water rights/quantity was dismissed.

Environmental Justice: Presidential Executive Order 12898, General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency, environmental justice is the:

> . . .fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

The goal of "fair treatment" is not to shift risks among populations, but to identify potential disproportionately high and adverse effects and identify alternatives that may mitigate these impacts.

There are both minority and low-income populations in the general vicinity of the Cumberland Gap National Historical Park. Households in census tracts adjacent to the park in Kentucky range from 26 percent to 36 percent impoverished, as compared to 16 percent of the households in the State of Kentucky and 12 percent of the households in the United States. Households in census tracts adjacent to the park in Tennessee and Virginia range from 13 percent to 39 percent impoverished, as compared to 14 percent of the households in the State of Tennessee and 10 percent of the households in the State of Virginia.

Although a disproportionate population of low income households resides in the vicinity of the park, the impact topic of environmental justice was dismissed for the following reasons:

- The park staff and planning team actively solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- Implementation of the preferred alternative would not result in any identifiable adverse human health effects.
- Impacts associated with implementation of the preferred alternative would not disproportionately affect any minority or low-income population or community.

- Implementation of the preferred alternative would not result in any identified effects that would be specific to any minority or low-income community.
- The park staff and planning team do not anticipate the impacts on the socioeconomic environment to appreciably alter the physical and social structure of the nearby communities.

Air Quality: The 1963 Clean Air Act, as amended (42 U.S. Code 7401, et seq.), requires federal land managers to protect air quality, and the NPS Management Policies 2006 address the need to analyze air quality during park planning. Air quality monitors in Bell County, Kentucky recorded no days during 2003 where the air quality index exceeded the National Ambient Air Quality Standards (Scorecard 2007). Tennessee state officials indicated that Claiborne County is in attainment of National Ambient Air Quality Standards (TDEC 2007a). There is no air quality monitoring in Lee County, Virginia. The nearest monitoring station is in Bristol, Virginia and the air quality in this community meets National Ambient Air Quality Standards (Scorecard 2007). None of the proposed activities in the park would require air quality permits. For these reasons, the impact topic of air quality was dismissed.

Other Geological Resources: Soil, caves and/or karsts, and paleontological resources are treated separately. No other geological resources of the Cumberland Gap National Historical Park would be impacted by any of the proposed management alternatives. For this reason, the impact topic of geological resources was dismissed.

Hazardous Materials: Management alternatives would not cause hazardous materials to be generated or affect the treatment of hazardous materials. The tunnel is used by several hundred trucks or other vehicles each week that carry hazardous materials, but the operation and management of the tunnel would remain the same under all alternatives. Therefore, the impact topic of hazardous materials will not be further addressed in this plan.

Wild and Scenic Rivers: The proposed management alternatives would not affect federally designated Wild and Scenic Rivers, since none of these occur in the park. A State of Kentucky designated Wild and Scenic River (Martin's Fork) is located in a remote area that is included within the natural zone under all alternatives and would not be affected by any of the alternatives. For this reason, the impact topic of wild and scenic rivers was dismissed.

Ecologically Critical Areas, Wilderness, or Other Unique Natural Resources: Limited facilities would be constructed in areas that are already partially developed, and minor changes in access and visitor use are proposed under any of the management alternatives. The areas recommended and proposed as wilderness (14,091 acres) are included under the Recommended Wilderness Zone under all management alternatives and will continue to be managed as Wilderness. None of the proposed alternatives would, therefore, adversely affect ecologically critical areas, recommended wilderness areas, or other unique natural resources. For this reason, this impact topic was dismissed.

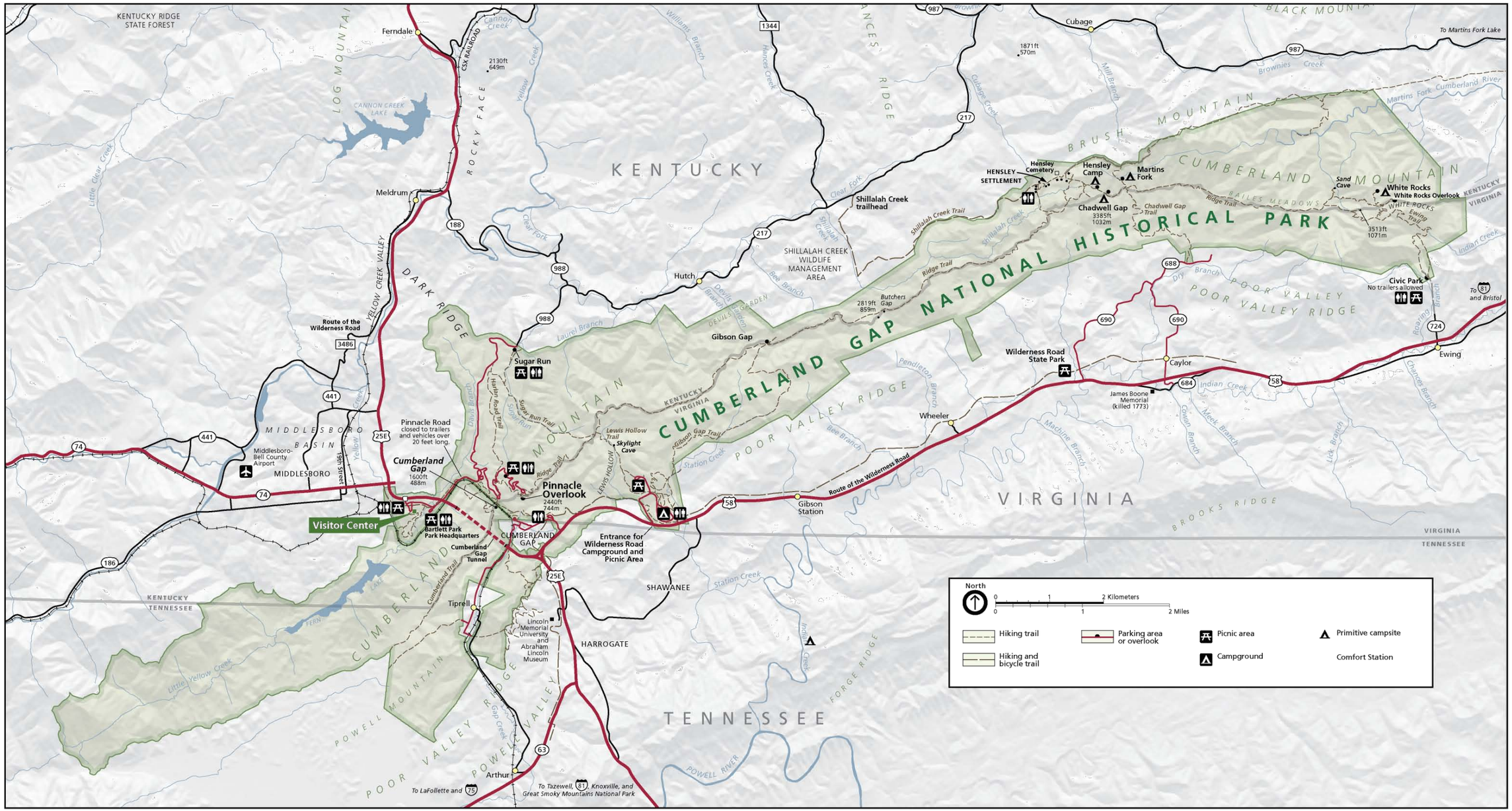
Paleontological Resources: Paleontological resources are defined as fossilized remains of plants and animals. Management alternatives are expected to have negligible affects on paleontological resources within the Cumberland Gap National Historical Park. Therefore, the impact topic of paleontological resources was dismissed.

Indian Trust Resources: Indian trust assets are owned by American Indians but are held in trust by the United States. Requirements are included in the Secretary of the Interior's Secretarial Order 3206, American Indian Tribal Rites, Federal – Tribal Trust Responsibilities; the Endangered Species Act; and Secretarial Order 3175, Departmental Responsibilities for Indian Trust Resources. According to park staff, Indian trust assets do not occur within the park. Therefore,

there would be no effects on Indian trust resources resulting from any of the alternatives. For these reasons, the impact topic of Indian trust resources was dismissed.

Natural Lightscape (Night Sky): The proposed management alternatives would have a negligible effect on the lightscape. Pinnacle Road is closed after dark and the primary activity centers in the park are near populated communities. For these reasons, the impact topic of lightscape was dismissed.

Energy Requirements and Conservation Potential, Sustainable Design: None of the alternatives presented in this general management plan would result in a measurable change in energy consumption compared to current conditions. The NPS would pursue sustainable practices whenever possible in all decisions regarding park operations, facilities management, and developments in Cumberland Gap National Historical Park, as called for in the NPS *Management Policies 2006*. Therefore, the impact topic of energy requirements and conservation potential was dismissed.



Park Map

Cumberland Gap National Historical Park

U.S. Department of the Interior - National Park Service

Figure 2

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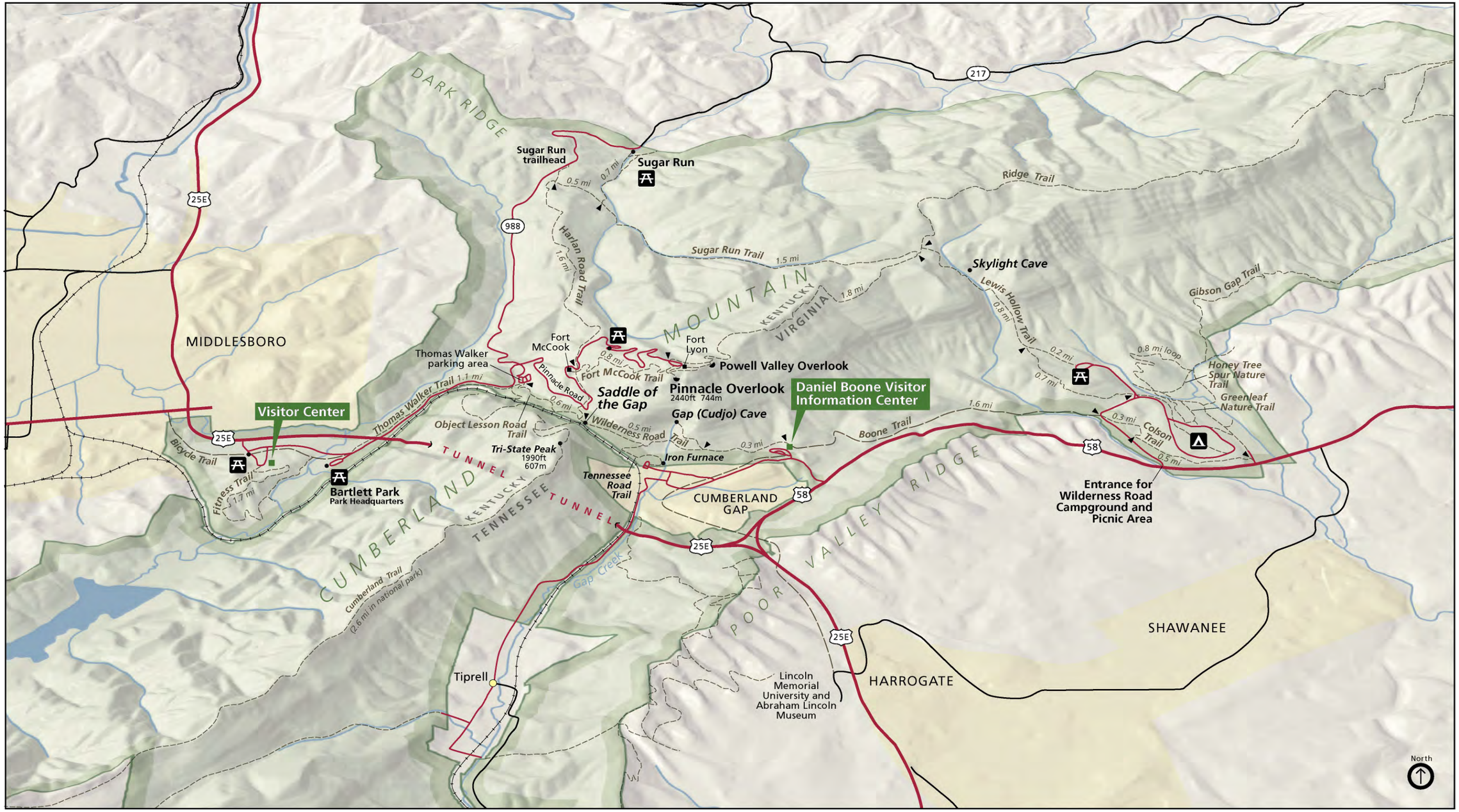

Detailed Map of Park Features Within the Cumberland Gap Area

Figure 3

Cumberland Gap National Historical Park

U.S. Department of the Interior - National Park Service

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Chapter 2
ALTERNATIVES

The Pinnacle Overlook

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CHAPTER 2
ALTERNATIVES

This chapter presents three alternatives, including the preferred alternative, for future management of Cumberland Gap National Historical Park. The alternatives were developed based on input from public and NPS scoping meetings, coordination with other agencies, stakeholders, and other organizations, as described in Chapter 6, Summary of Public Involvement. The three alternatives, each of which is consistent with the park's purpose, significance, and fundamental resources and values, are Alternative A – the no action alternative, and action alternatives B and C. Alternative A is included as a baseline for comparing the environmental consequences of implementing each "action" alternative.

This chapter also presents sections on management zones, prescriptions, user capacity, a comparative cost analysis, a summary table of the impacts associated with each alternative, mitigative measures common to both action alternatives, the environmentally preferred alternative, as well as other alternatives or actions considered but dismissed from further analysis.

MANAGEMENT ZONES

Management zones prescribe how different areas of the Cumberland Gap National Historical Park would be managed. Each management zone specifies cultural resource and natural resource desired future conditions, opportunities for visitor experiences, and appropriate facilities, and combines these into a possible management strategy applied to locations (or mapped) within the park. Each management zone defines how different areas of the park would be managed. In every management zone the park would preserve and protect cultural and natural resources to the greatest extent possible given available funding.

Four management zones and a set of prescriptions for each zone were created: Cultural Resource Zone, Natural Zone, Recommended Wilderness Zone, and Developed Zone. The management prescriptions, or kinds and levels of visitor use as well as the types of facilities that are appropriate by zone, are listed on Table 4. These types and levels of use and facilities are based on the input gathered during the scoping process. An overview of the management zones is provided in the pages that follow.

CULTURAL RESOURCE ZONE

The Cultural Resource Zone represents areas that focus on education, outreach, and restoring and preserving cultural resource conditions. This zone would include the two Historic Districts, Cumberland Gap and Hensley Settlement, and would allow for protection of these historic structures and landscapes as well as appropriate uses by visitors.

Visitor Experience

Visitors would have the opportunity to step back in time and experience life as it was years ago in the region. The primary visitor experience would be seeing and visiting historic structures and landscapes indicative of the region's cultural heritage. The visitor's experience would be diverse. The visitor could experience life in the 1900s in the Hensley Settlement or could follow Daniel Boone's path through the Cumberland Gap along the restored Wilderness Road. Guided tours would be available to provide the visitor with additional information about the area. There would be a moderate to high degree of education and outreach activity in this zone as visitors enjoy and learn about historic activities, buildings, and landscapes. Self sufficiency and knowledge of outdoor skills are not expected to be highly necessary in historic districts; however, hiking skills would be preferred in some areas. The level of encounters with other visitors and park staff would be expected to be moderate to high. However, the opportunities to experience solitude, quiet and a sense of isolation, in particular for the Hensley Settlement, would be expected.

Table 4. Management Prescriptions for Cumberland Gap National Historical Park

Category	Cultural Resource Zone	Natural Zone	Recommended Wilderness Zone	Developed Zone
Appropriate Kinds and Levels of Visitor Use				
Hiking	Yes	Yes	Yes	Yes
Biking		Yes – In designated areas only		Yes – In designated areas only
Camping		Yes - In designated areas only	Yes - In designated areas only	Yes
R/V Camping				Yes
Picnicking and nature observation	Yes	Yes	Yes	Yes
Scientific research/restoration by outside organizations	Yes – Pending approval by the Superintendent	Yes – Pending approval by the Superintendent	Yes – Pending approval by the Superintendent	Yes – Pending approval by the Superintendent
Interpretive programs	Yes	Yes	Yes	Yes
Special events	Yes - In designated areas only, pending approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent
Rock Climbing and Rappelling		Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent		

Table 4. Management Prescriptions for Cumberland Gap National Historical Park (Continued)

Category	Cultural Resource Zone	Natural Zone	Recommended Wilderness Zone	Developed Zone
Cave Tours	Yes	Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent	Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent	Yes
Cave Exploration		Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent	Yes - In designated areas only, pending further study, consultation, and approval by the Superintendent	
Cave Research	Yes	Yes - In designated areas only, pending approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent	Yes - In designated areas only, pending approval by the Superintendent
Horseback Riding	Yes - In designated areas only	Yes - In designated areas only	Yes - In designated areas only	Yes - In designated areas only
Fishing, non-motorized boating, electric trolling motors		Yes - In designated areas only		Yes
Wagon Rides	Yes			
Appropriate Types of Facilities				
Hiking Trails	Yes	Yes	Yes	Yes
Horse Trails	Yes - In designated areas only	Yes - In designated areas only	Yes - In designated areas only	Yes - In designated areas only
Bicycle Trails		Yes, in designated areas only		Yes, in designated areas only

Table 4. Management Prescriptions for Cumberland Gap National Historical Park (Continued)

Category	Cultural Resource Zone	Natural Zone	Recommended Wilderness Zone	Developed Zone
Parking areas, picnic facilities, concession facilities, maintenance facilities, visitor centers and contact stations.				Yes
Administrative Facilities	Yes		Yes – Must meet minimum requirements	Yes
Cabins	Yes –existing only			Yes
Backcountry Camp Sites/ Shelters		Yes - In designated areas only	Yes - In designated areas only must meet minimum requirements	
Campground				Yes
Playgrounds				Yes
Signage	Yes	Yes - In designated areas only	Yes – In context; where necessary for visitor safety and resource protection	Yes
Comfort Stations	Yes - Primitive (waterless) facilities only	Yes - Primitive (waterless) facilities only		Yes
Paved Roads		Yes – existing only		Yes
Bridges	Yes – In context	Yes - In designated areas only		Yes
Wagon Trail	Yes			

Note: Wild caving refers to ranger-led exploration of caves that are completely underground, and that occur in areas of the cave system that are not normally open to the general public. Wild caving also presents an increased level of physical and psychological challenge for visitors interested in this type of activity.

Resource Condition or Character

Resource protection, restoration, research, and interpretation are key elements of the Cultural Resource Zone. Cultural resource management would emphasize preservation of cultural landscape values, focusing on the setting, feeling, and physical features that convey the historic or cultural character of the Historic Districts. Restoring and preserving cultural landscape values, as well as education and outreach, would be the primary management emphasis in this zone. A high level of resource and visitor management would be required to protect resources in this zone, and there would be low tolerance for resource degradation.

Appropriate Kinds of Activities or Facilities

The types of experiences that would be appropriate in the Cultural Resource Zone would include sightseeing, hiking, picnicking, observing nature, cave research, habitat restoration, scientific research, and enjoying interpretive programs. Horseback riding would be appropriate in designated areas. Facilities that would be appropriate in the zone include restored structures, signs, administrative facilities, hiking trails, horse trails, primitive comfort stations, bridges, and wagon trails. Facilities would be unobtrusive and fit within the historical context.

NATURAL ZONE

The Natural Zone focuses on preserving the natural environment to allow visitors more diverse experiences within the park. The Natural Zone incorporates increased visitor activities while preserving the natural experience. This zone would encompass the majority of the Fern Lake watershed and areas near the Hensley Settlement and Civic Park.

Visitor Experience

In the Natural Zone, the visitor would be given a high diversity of experiences in more undeveloped areas of the park. Visitors would be able to choose a level of challenge or risk for his/her level of experience. This zone includes important natural features, including White Rocks, Sand Cave, and the Fern Lake Watershed. There is a sense of being in a natural landscape and visitors enjoying their natural surroundings on foot or by horseback in some designated trails. Opportunities for solitude are plentiful.

Resource Condition or Character

The character of this zone is natural overall; alterations are minimal and designed to blend with the natural environment. Restoring and preserving natural resources, scientific research, as well as education and outreach are the primary management emphasis in the Natural Zone. A moderate level of resource and visitor management would be required to protect resources in this zone, and there would be low tolerance for resource degradation.

Appropriate Kinds of Activities or Facilities

The types of appropriate experiences in this zone would include hiking, biking, camping in designated areas, picnicking, habitat restoration, scientific research, interpretive programs, and special events. In designated areas, the following types of visitor use are appropriate: rock climbing and rappelling, cave tours, cave exploration, cave research, horseback riding, fishing, non-motorized boating, and electric trolling motor boating.

Facilities that would be considered appropriate in certain areas of this zone would include hiking and horse trails, backcountry camping in designated areas, signs, primitive comfort stations, existing roads, and bridges. Other facilities would be unobtrusive and fit within the natural environment using sustainable practices.

RECOMMENDED WILDERNESS ZONE

The Recommended Wilderness Zone focuses on preserving the natural environment to allow visitors to experience the area the way our ancestors did hundreds of years ago. This zone would encompass

the majority of the park (14,091 acres) and provide visitors with an opportunity to experience nature where human impact is largely unnoticeable and natural forces are the primary influence on the landscape. Visitors may enjoy primitive recreation on foot or horseback. The Recommended Wilderness Zone is the same for Alternatives B and C.

Visitor Experience

There would be a high degree of opportunity to experience solitude and tranquility, and a high degree of opportunity to feel close to nature. The sights and sounds of nature would prevail in this zone. The level of encounters with other visitors and park staff would be low compared to other management zones in the park. The amount of time, outdoor skill, and degree of self-reliance needed in this zone would be high, and greater than other zones.

Resource Condition or Character

This zone's character is natural overall; alterations are minimal and designed to blend with the natural landscape. Protecting and preserving natural resources is a very high priority. The Recommended Wilderness Zone provides the opportunity to allow the existing forest to reach its climax stage of growth, and the wildlife to exist in an undisturbed habitat. Natural resources may be modified to provide safe visitor access or reduce the overall level of resource impacts. Cultural resources within the zone would be preserved, but may be modified to preserve or restore natural resources. Cultural resources would be protected and maintained according to the pertinent laws and policies governing cultural resources.

Appropriate Kinds of Activities or Facilities

This zone provides a variety of experiences that allow visitors to enjoy nature and solitude. Recreational uses of this zone are to be of a type and nature that enable the areas to retain their undeveloped primeval character and influence, protect and preserve natural conditions, leave the imprint of man's work substantially unnoticeable, provide outstanding opportunities for solitude or primitive types of recreation, and preserve wilderness in an unimpaired condition. Appropriate activities include hiking, backpacking, camping, picnicking, nature observation, and habitat restoration; scientific research would be appropriate pending park approval. Cave tours, cave exploration, cave research, and horseback riding would be appropriate in designated areas. These activities are subject to limitation based on further study and analysis, and approval from the Superintendent.

Facilities are limited to those necessary for protecting resources and/or visitor safety. Appropriate facilities must meet minimum requirements for wilderness areas as defined by NPS Management Policies 2006 and could include trails, backcountry campsites, primitive comfort stations, and limited signage. Signage would only be constructed in context of the natural environment and for purposes of visitor safety and/or resource protection. Permanent roads are not appropriate in this zone.

Travel in this zone would be by foot or by horseback on designated trails. Operating a motor vehicle or possessing a bicycle in the Recommended Wilderness Zone is prohibited. The use of a wheelchair, as defined by the Americans with Disabilities Act of 1990, is appropriate. Service animals accompanying persons with disabilities are also appropriate in the Recommended Wilderness Zone.

All travel and management efforts in the Recommended Wilderness Zone would be accomplished by unmechanized means. For example, routine patrols for maintenance and protection would be accomplished by foot or horseback rather than by automotive or off-road vehicle. Use of hand tools for trail maintenance or other activities would be appropriate rather than the use of power tools.

DEVELOPED ZONE

The Developed Zone focuses on providing visitor access, information, structured activities, and other visitor services. This zone would include the visitor center and visitor contact stations in the park, and also supports the park's main administrative and operational facilities.

Visitor Experience

In the Developed Zone, visitors could expect a high diversity of experiences in areas of the park that feature basic facilities. There would be a high degree of education and outreach activity and information would be expected to be readily available. Visitors could expect more of the built environment in this zone, with buildings such as a visitor center or contact station, comfort stations, and parking facilities. All facilities would be readily accessible and most facilities would be compliant with Americans with Disabilities Act requirements. The level of encounters with other visitors and park staff would be high. The visitor would face a low level of challenge or risk in the Developed Zone.

Resource Condition or Character

Accessibility, visitor services, education, and outreach activities are the primary management emphasis in the Developed Zone. A high level of resource and visitor management would be required in this zone. In this zone, natural resources could be moderately to highly modified to accommodate facilities, operations, visitor services, and staff needs. Cultural resources may be modified to accommodate NPS operational facilities or high levels of visitor use.

Appropriate Kinds of Activities or Facilities

The types of appropriate activities in this zone would include hiking, picnicking, observing nature, fishing, non-motorized and electric trolling motor boating, habitat restoration, scientific research, and enjoying interpretive programs. Other activities that would be appropriate in designated areas in this zone include biking, camping, recreational vehicle camping, and horseback riding. Rock climbing is considered an appropriate activity in designated areas, and/or pending further study and consultation with regard to public health and safety, threatened and endangered species, resource sensitivity, or visitor experience. Facilities that would be considered appropriate in this zone would include hiking and horse trails, administrative facilities, maintenance facilities, parking areas, picnic areas, concessioner facilities, visitor centers and contact stations, campground, cabins, signs, comfort stations, paved roads, playgrounds (subject to additional study), and bridges.

USER CAPACITY

User capacity defines the type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in the park. The 1978 National Parks and Recreation Act (16 U.S. Code, §Ia-7) requires public land planning efforts to address user capacities to ensure adequate protection of the park's natural and cultural resources and quality of visitor experience.

The user capacity management process requires developing a set of indicators and standards for resource protection. Indicators are defined so that existing conditions can be compared to desired conditions within the park. Indicators serve as measurable variables that can be used to track changes in resource and social conditions related to human activity. Standards provide the thresholds against which indicators are measured and define if/when management action should be taken. Indicators and standards for the park's user capacity management program were developed based on issues raised during public scoping in combination with visitor use data, and staff observations. The park's indicators that measure whether or not desired resource conditions and visitor experiences are being achieved as well as standards that provide limits of acceptable change for the indicators are listed in Table 5. The management zones for which each indicator is likely to be most relevant are identified in Table 5 as well as the potential management actions to address resource and/or visitor experience concerns.

Table 5. List of Potential Indicators, Standards, and Park Management Strategies for Cumberland Gap National Historical Park

Issue	Potential Indicator	Management Zone	Recommended Standard	Potential Management Strategies
Need for increased interpretive (education, communication, outreach) activities at Hensley Settlement and Fern Lake surrounding lands	Visitor Use Survey Results Number of visitor complaints or requests Emailed comments / tracking of responses provided	Cultural Resource Zone Natural Zone	Visitor Use Survey results show a 10% decrease in visitor satisfaction over a five-year period. The satisfaction rate ranged from 96% to 100% over the past five years.	Add concessioners Increase number of volunteers Conduct surveys Redistribution of interpretive staff to peak days/seasons
Impacts from backcountry camping	Proliferation of user created campsites Number of incidents of resource damage (case incident reports) Damage to trails Number of complaints	Recommended Wilderness Zone Natural Zone	Increased size of campsite measured by photo documentation on an annual basis; asset condition assessments at least bi-annually; tree damage, and/or signs of improper human waste disposal. Incident case report increase from 5 per year to10 per year or more. Facility condition index degraded by 10%.	Maintain permit system for back country sites, per the Compendium. Enforce limits: number per tour group/ number of groups Track work orders (coordination between maintenance and enforcement). Increase public outreach Encourage Leave No Trace
Protect water quality; Fern Lake – protect drinking water supply/watershed	Degradation of water quality; Increased erosion, sedimentation, turbidity	Natural Zone Developed Zone	Water Quality Standards are exceeded.	Maintain water quality sampling efforts.

Table 5. List of Potential Indicators, Standards, and Park Management Strategies for Cumberland Gap National Historical Park (Continued)

Issue	Potential Indicator	Management Zone	Recommended Standard	Potential Management Strategies
Unauthorized trails	Any increase over existing conditions. Number of visitor complaints Number of incidents of resource damage (case incident reports / work orders). Damage to trails	All zones	Standard is exceeded when 2009 existing conditions are exceeded. Track complaints for increase of greater than 5% compared to last five years of information. Number of repeated incident report/work order for same area of concern is more than three.	Increase education regarding conditions and need for certain restrictions. Increased use of volunteers in the park. Educate, provide safety information through signs and interpretive displays. Use of barriers and other restrictive measures. Increased staff presence. Continue to address unauthorized trails immediately, as they are discovered.
Degree of impact to sensitive plants at White Rocks	Total area of loss in any one area of plant cover increased compared to 2007 Study (Dr. Gary Walker, Appalachian State). Number of incidents of resource damage	Recommended Wilderness Zone	No loss of vegetative cover.	Develop long-term monitoring strategy. Increase efforts towards public education of park regulations and awareness of sensitive resources Increased enforcement Installation of barriers
Provide for visitor enjoyment at the Hensley Settlement	Number of registered complaints Number of case incident reports (vandalism, and unintentional damage to historic structures) Decrease in the number of visitors	Cultural Resource Zone	10 % decrease in visitor satisfaction levels over five year period. 10 % increase in case incident reports. Any increase in maintenance requests.	Provide more information on the sensitivity and value of Hensley Settlement Increase staff presence Direct use away from particularly vulnerable sites or structures Provide shuttle service for special events

User capacity is addressed in the following ways for Cumberland Gap National Historical Park:

- The management zones described earlier in this chapter 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 identify 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 in that it directs the NPS on how to best protect resources and visitor experiences while offering a diversity of visitor experience opportunities.
- The park's most pressing use-related resources and visitor experience concerns, existing and potential are described, given the park's purpose, related desired conditions, and the vulnerability of specific resources and values. This helps NPS managers focus limited resources on the most significant indicators.
- Indicators and standards are identified that would be monitored in the future to determine if desired conditions are not being met due to unacceptable impacts from visitor use.
- Potential management strategies that may used to avoid or minimize unacceptable impacts from visitor use are outlined.

The NPS would monitor the established indicators and take management action as needed to meet the standards. As park management gains knowledge from applying and testing the indicators and standards in the field, revision and refinement may be required, creating a continuous user capacity decision making process. If new use-related resource or visitor experience concerns occur in the future, additional indicators and standards would be identified as needed to address these concerns. Final selection of indicators and standards for monitoring purposes and implementation of management actions that affect use would comply with the National Environmental Policy Act (1969), Section 106 of the National Historic Preservation Act, and other laws and NPS management policies as appropriate.

FORMULATION OF THE ALTERNATIVES

This general management plan presents three management alternatives, including the NPS's preferred alternative for future management of Cumberland Gap National Historical Park. Each of the alternatives features an overall management concept and a description of how different areas of the park would be managed in the future (management prescriptions, zones, and related actions). The concept provides a basis for summarizing the main features of each alternative.

Alternative A, the No Action Alternative, would be a continuation of existing management practices. The NPS is required under the National Environmental Policy Act to include Alternative A to provide a baseline for comparing the consequences of implementing each of the other alternatives. The two other "action" alternatives are identified as Alternatives B and C. The action alternatives present two different ways to manage resources and visitor use and improve facilities at the park within the context of the Cumberland Gap National Historical Park's purpose, significance, and special mandates. The two alternatives embody the range of what the public and the NPS staff would like to see accomplished with regard to management and natural resource conditions, cultural resource conditions, and visitor use and experience at Cumberland Gap National Historical Park.

Each management alternative takes into consideration NPS mandates, laws and policies, and provides for appropriate levels of protection of the resources in accordance with these laws and policies. Each alternative is consistent with maintaining the park's purpose, significance, and fundamental resources and values. The planning team followed this premise during the development of each of the alternatives. The following is a summary of the steps used to develop the alternatives.

- Comments were received at public meetings held in Cumberland Gap, Tennessee; Pineville, Kentucky; and Duffield, Virginia on August 10-12, 2004. All public meetings were announced via

newspaper, radio, television, and through public service announcements, postings in public places, and flier distribution. A total of 63 persons attended the meetings and 60 persons provided comments at the meetings.

- Comments were reviewed by the NPS planning team, and then further sorted into the following categories as per the requirements of NPS planning guidelines: (1) issues that can't be addressed because they are inconsistent with existing NPS laws or policies; (2) actions that must be done because they are mandated by existing laws, regulations, policies or mandates; (3) interests or concerns that have been raised and that are appropriate to consider in a general management plan; and (4) actions that are more appropriately addressed by other types of plans, such as an implementation plan.
- Based on the issues identified, the planning team developed two preliminary action alternatives within the framework of the park's purpose, significance, and special mandates. The No Action Alternative, continuation of current management practices, was also summarized.
- The preliminary alternatives were presented during four public meetings held at the Cumberland Gap National Historical Park visitor center in November, 2005. All public meetings were announced via newspaper, radio, television, and through public service announcements, postings in public places, and flier distribution. A total of 40 persons attended the meetings and 21 persons provided comments at the meetings. Many of the comments were in the form of questions answered during the meeting and through dialogue with the planning team.
- Comments received and input from park staff during the meetings on the preliminary alternatives were carefully reviewed and incorporated into this plan.

As required by the NPS guidelines and policies, the alternatives focus on the general resource conditions and visitor uses and experiences/opportunities that should occur at the national park, rather than on details of how these conditions and uses/experiences should be achieved. The alternatives, therefore, do not include many details on resource or visitor use management. As a result, more detailed plans or studies would be required before most conditions proposed in the alternatives are achieved. Implementation of any alternative also depends on future funding and completion of the environmental compliance process. This general management plan, therefore, does not guarantee that funding for projects or programs will be forthcoming. Instead, the purpose of the plan is to establish a vision of the future that would guide the year-to-year management of the park; full implementation of the plan could take many years. For each action or project, an environmental assessment would also be prepared that would specify site specific impacts and mitigation needed for that project. These environmental assessments also allow opportunity for public input.

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

Development of a preferred alternative involves evaluating the alternatives with the use of a rational analysis process called "choosing by advantages." Choosing by advantages is a decision-making system based on determining the advantages of different alternatives for a variety of factors or goals.

Through this process, the planning team identifies and compares the relative benefits or advantages of each alternative according to the following factors:

- Prevent loss of cultural and natural resources and wilderness values.
- Maintain and improve the condition of cultural and natural resources.
- Provide educational and recreational visitor services.
- Provide for public health, safety, and welfare.
- Improve operational efficiency and sustainability.

- Provide for employee health, safety, and welfare.
- Connectivity to other state and local managed lands.

The advantages are scored in relation to their satisfaction of each factor and summed to help identify the preferred alternative. This process is a systematic way to perform a complicated task, provides a way to engage participants, and assists in the consensus building process. It also leads to documented and consistent decision making.

The NPS's preferred alternative for this draft general management plan/environmental impact statement is Alternative C.

ACTIONS COMMON TO ALL ALTERNATIVES

Each of the alternatives provides for the protection of natural and cultural resources within the park, while providing recreational opportunities. Based on comments received from the public and park staff recommendations, many people expressed the desire for park activities to remain the same. Therefore, many of the existing features of the park are maintained across all alternatives, including the following elements:

- The tunnel would continue to operate as it does presently under all three alternatives.
- The renovated visitor center in Middlesboro, Kentucky would remain unchanged as would the newly constructed Daniel Boone Wilderness Road Visitor Contact facility.
- Visitor use and experiences at Cumberland Gap Historic District are expected to remain unchanged.
- No changes in the facilities at the 15-acre Civic Park Area would be made, since this area is newly renovated, and include a parking lot, picnic tables, picnic shelter, and comfort stations. The civic park provides access to the Sand Cave and White Rocks area and is donated/ leased to the park under a 50-year agreement with the Civic Park Association.
- Museum collections would be preserved and maintained under all three alternatives. These collections include both cultural and natural history collections and are described in Appendix D.
- The boat house and two residences at Fern Lake would be stabilized and maintained for public use.
- Acquisition of Fern Lake and all existing facilities near the lake, is assumed under all alternatives. Because Fern Lake is a drinking water supply reservoir, a limited range of visitor activities (hiking, fishing, electric trolling motor boating, and non-motorized boating) and only minor, park facilities would be appropriate in the future. A composting comfort station is proposed at Fern Lake under each alternative. As a public water supply, Fern Lake falls under the State of Kentucky Administrative Regulation (401 KAR8:020), and therefore swimming and gasoline motor- driven water craft and other human contact is prohibited.
- The Recommended Wilderness, 14,091 acres, would be managed as wilderness under all three alternatives while awaiting final classification as designated Wilderness from the Department of the Interior or congressional action.
- Opportunities for hang gliding are addressed by individual permit only.

DESCRIPTION OF THE ALTERNATIVES

This section provides a description of the No Action Alternative and the two action alternatives. For each alternative, a discussion of the following is included: management concept, appropriate kinds and levels of visitor use, facilities, outreach/education and partnering, desired resource condition or character, and the management zones and uses. The number of acres mapped for each zone and

relevant sub-features are summarized by alternative in Table 6. For the No Action Alternative, the zones from the previous general management park plan are presented. Note that the prior general management plan included subzones, a different manner of mapping zones in the park, and therefore not all acreages presented are directly comparable. For example, under Alternative A, the wilderness area is mapped as a subzone of the Natural Zone. Under Alternatives B and C, a new, separate Recommended Wilderness Zone was created. The zone name is indicated where these differences occur. Table blanks indicate the zone does not occur.

Table 6. Acreages of Management Zones by Alternative

Zone	Alternative A - No Action[1]	Alternative B	Alternative C – Preferred Alternative
Natural Zone			
Natural Environmental Features Subzone[1]	4,710		
Natural Zone	4,544	8,533	8,483
Total Natural Zone Acreage	**9,254**	**8,533**	**8,483**
Recommended Wilderness Zone	Wilderness Area (Included under Natural Zone)	Recommended Wilderness Zone	Recommended Wilderness Zone
Recommended Wilderness	12,191	12,191	12,191
Potential Wilderness	1,900	1,900	1,900
Total Recommended Wilderness Zone Acreage	**14,091**	**14,091**	**14,091**
Developed Zone	Development Zone	Developed Zone	Developed Zone
Park Headquarters and Visitor Center Area	212	255	255
Wilderness Road Campground Area	344	689	689
Sugar Run	32	66	66
West of Hensley	7	111	127
East of Hensley	3	131	131
Fern Lake Area		32	82
Civic Park Area	15	15	15
Total Developed Zone Acreage	**613**	**1,299**	**1,365**
Historic Zone			
Gap Area	434		
Hensley Settlement	139		
Total Historic Zone Acreage	**573**		
Cultural Resource Zone			
Gap Area		434	434
Hensley Settlement		174	158
Total Cultural Resource Zone Acreage		**608**	**592**
Total	**24,531**	**24,531**	**24,531**

[1]The 1979 Master Plan included subzones.

Note: Acreages are approximate. Acreages under Alternative A are not directly comparable because zoning practices were different and did not include roads, nor encompass as large an area.

ALTERNATIVE A

Management Concept

Alternative A, the No Action Alternative, is included in the general management plan in compliance with the Council on Environmental Quality (CEQ 1978) *Guidelines for Implementing the National Environmental Policy Act and Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision Making* (NPS 2001b). Alternative A consists of a continuation of current management practices, directions, and trends at Cumberland Gap National Historical Park into the future. Projects and plans approved, but not yet constructed, are included under this alternative. This alternative is used as a basis for evaluation and comparison of the effects of the other two management alternatives.

Appropriate Kinds and Levels of Visitor Use

The kinds and levels of visitor use would continue to be the same as present, except visitors would be able to visit Fern Lake when its acquisition is complete. The main types of visitor activities and experiences in the majority of the park would remain the same and would include auto touring, guided tours, guided cave tours, backpacking, biking, bird watching, camping, hiking, exercising, horseback riding in designated areas, interpretive programs, nature walks, exploring the wilderness area, and wildlife viewing. Recreational rock climbing, free climbing or bouldering is not considered an appropriate activity under Alternative A. Rappelling is prohibited within 0.5 mile of the Pinnacle, Sand Cave, and White Rocks. Rappelling outside these areas requires a permit. Because Fern Lake is a drinking water supply reservoir, a limited range of visitor activities (hiking, fishing, electric trolling motor boating, non-motorized boating, and horseback riding at a distance greater than 100 feet from the lake) and only minor park facilities would be appropriate for Fern Lake and surrounding area under Alternative A. Under Alternative A, these types of future, limited uses would be possible at the time Fern Lake becomes accessible to the public.

Visitors would continue to visit and utilize the major attractions in the park, including the renovated visitor center/auditorium, Pinnacle Overlook, Hensley Settlement the Daniel Boone Wilderness Road Visitor Contact Station/Wilderness Road, Wilderness Road Trail, Iron Furnace, Gap Cave, Wilderness Road campground, Martin's Fork cabin, backcountry camping (by permit), hiking trails and trail heads, the Civic Park Area near Sand Cave and the White Rocks**,** and picnic/recreation areas such as Bartlett Park and Sugar Run. NPS guided tours of Hensley Settlement and Gap Cave would be expected to continue into the future.

Visitor Experience

Visitors would continue to have a wide variety of experiences in the park. Visitor orientation services would continue at the NPS visitor center, and at the Daniel Boone Wilderness Road Visitor Contact Station. Interpretive activities would continue throughout the park, with special emphasis at Hensley Settlement, the Daniel Boone Wilderness Road Contact Station, guided walks, and guided cave tours. A variety of popular interpretive and education programs (e.g., guided hikes, seasonal and school programs), and some special events would continue. Opportunities to enjoy recreational activities would continue to exist in a variety of settings. Roads, trails, campgrounds, and primitive campsites would all remain essentially the same. Access to the Hensley Settlement would continue via NPS guided tour vans using the gated Shillalah Creek Road. Access to trails would be expected to remain the same. Bicycle use would continue to be allowed on roads used by motor vehicles Visitors would be able to continue to enjoy the facilities currently offered, as well as the visitor services provided as described below. No new programs, activities, trails, or uses would be expected.

Facilities

The main facilities include the Visitor Center, the newly constructed Daniel Boone Wilderness Road Visitor Contact Station, the Wilderness Road Campground, the Hensley Settlement, Gap Cave, picnic areas and trail heads, and all roads and parking areas. The facilities at Fern Lake include a boat house

and two residences that would be acquired in the future. These facilities would be stabilized and maintained by the NPS under Alternative A. In addition, a composting comfort station would be installed at Fern Lake for use by visitors. No other major new facilities would be constructed.

Outreach/Education and Partnering Programs

The park has a wide variety of interpretive or outreach/education programs that have been a key element in its success over the years. These programs include Heritage Fairs, Nature Fairs, and a large number of educational programs. In addition, numerous partnering programs with local and regional organizations have been developed, including a formal caving partnership program. Under Alternative A, the numbers and types of these programs would continue at their present levels as funding allows.

Resource Condition or Character

Under Alternative A, there would be no major changes in the condition or character of natural and cultural resources in the majority of the park. These resources would continue to be managed as they are at the present time or updated based on research efforts in the park. The park would be responsible for maintaining the character and condition of Fern Lake in the future on completion of acquisition. Archeological sites inventories are proposed for completion, along with cultural landscape inventories and reports, historic structures preservation guides for Hensley Settlement. Museum collection management and emergency planning efforts would be conducted as well as other continued resource management efforts for natural and cultural resources.

Management Zones and Uses

Under the No Action Alternative, the existing management zones, as specified in the 1979 Master Plan, would continue to be used. There are currently three zones at the park with a variety of sub-zones. The existing zoning includes Development Zone, Natural Zone, and Historical Zone (Figure 6).

In addition to the zones presented in the original plan, Fern Lake and the surrounding 4,500 acre watershed would also be included as part of the park. However, no desired future conditions for this area are defined in the existing management plan. The lake and surrounding watershed are designated as the "Fern Lake watershed" (Figure 6). Some of the major features for zones under Alternative A are described as follows. Acreages are summarized in Table 6.

Development Zone

Visitor experiences in this zone would include camping, hiking, biking on paved surfaces, special events, and interpretive walks and talks. Appropriate facilities would include parking lots, roads, trails, a visitor center and contact stations. Management emphasis would be on providing visitor access, education, and outreach. The following features would remain unchanged:

- **Visitor center.** The redesigned visitor center and surrounding grounds would continue to be used for interpretive programs, trails, and other related services. Administration and maintenance offices are also located in this area.
- **Sugar Run.** The small picnic area at Sugar Run would continue to be used for picnicking and as a trail head. Sugar Run would continue to be connected to the central Gap area by Kentucky State Road 988.
- **Wilderness Road Campground and Picnic Area.** This is the only developed campground in the park. It would continue to be managed and operated in the same way and would not be expanded or otherwise modified.

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Insert Figure 6. Alternative A (No Action)

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- **Development Zone west of Hensley Settlement.** The existing minimal facilities include a gravel parking area adjacent to Hensley Settlement for NPS use only; limited parking at the base of Brush Mountain; waterless comfort station near the parking area at Hensley Settlement; and the gated Shillalah Creek NPS access road would continue to be used to support the Hensley Settlement.
- **Development Zone east of Hensley Settlement.** This area consists of a gravel road, one backcountry campsite, and Martins Fork Cabin (which can be rented for overnight lodging by visitors). These areas and facilities would continue to be used as they are presently.

Natural Zone

Visitor experiences in this zone would include hiking, biking on designated trails, backcountry camping, and nature observation. Facilities would include existing parking lots, roads, and trails. Management emphasis would be on the restoration and preservation of natural and cultural resources, education, and outreach.

Wilderness subzones would continue to be managed as part of the Natural Zone, incorporated into two subzones: Wilderness Subzone and Potential Wilderness Subzone. There would be no changes to the amount of acreage (total of 14,091) or the manner in which the wilderness is managed. Both subzones would be managed as wilderness, and the park would continue to maintain their existing wilderness character into the future, as directed by Congress. The extent and use of the wilderness area would remain the same as under Alternative A.

The Natural Environment Sub-zone would continue to be managed for such uses as hiking and backcountry camping by permit. The NPS would continue to provide many opportunities for solitude, and natural experiences.

Historical Zone

Visitor experiences would continue to include guided tours and opportunities to learn about the two Historic Districts. Facilities located in the Historical Zone would include restored structures, trails, primitive comfort stations, and existing roads. Management emphasis would be on restoring and preserving cultural landscape values; education and outreach and interpretive activities. The following features would be included:

- **Hensley Settlement Historic District.** This Historic District would continue to be managed as a historic resource. Visitors would continue to have limited access, view historic structures, and enjoy interpretive programs on a seasonal basis.
- **Cumberland Gap Historic District.** This Historic District would continue to be managed as a historic resource. Visitors would continue to have limited access, view historic features, and enjoy interpretive programs on a seasonal basis.

ALTERNATIVE B

Management Concept

The concept of Alternative B is to increase opportunities for visitor access by providing additional park facilities as compared to Alternative A. This would expand visitor use of the park. Adverse effects on natural and cultural resources would be avoided by strategically locating and limiting the numbers and types of new facilities, primarily within the newly established Developed Zones at Fern Lake, selected areas in the vicinity of the Hensley Settlement, the Visitor Center area, and the Wilderness Road Campground.

Appropriate Kinds and Levels of Visitor Use

The kinds and levels of visitor use would be greater under Alternative B than under Alternative A. The following is a summary of the differences between these two alternatives.

- Under Alternative B, limited additional facilities would be provided at Fern Lake in a newly established Developed Zone, allowing visitors to have a wider variety of outdoor experiences in this newly established area of the park. A new Natural Zone would also be established to incorporate the rest of the Fern Lake watershed. Compared to Alternative A, there would be increased public access and additional recreational opportunities with defined management prescriptions.
- The visitor experience in Cumberland Gap would be changed as a result of the creation of a new Developed Zone that would connect the Wilderness Road Campground to the Wilderness Road and Gap. In comparison to Alternative A, visitors would experience increased connectivity between the campground and the Gap via enhanced biking and hiking trails. Although there is currently a hiking trail connection from the campground to the Gap and an off-road biking trail connection from the campground entrance road parking area to the Gap, additional hiking and biking trail connections could be provided within the Developed Zone under Alternative B. This would provide increased connectivity between the campground and the Cumberland Trail, Wilderness Road Trail, Pine Mountain Trail, and the Fern Lake area. In comparison with Alternative A, more park visitors would be able to visit and experience the unique resources in the town of Cumberland Gap as a result of greater connectivity between the campground and other areas of the park.
- Expansion of the Developed Zone to include Kentucky State Highway 988 from Sugar Run to the Gap area would allow greater visitor access to this part of the park. Facilities in this area have not yet been identified, but could include paved parking areas, additional picnic tables or shelters, trails, and a composting comfort station. Pinnacle Road has been included in the Developed Zone to allow for similar types of new facilities.
- Creation of Developed Zones adjacent to the east and west boundaries of the Hensley Settlement would increase the potential use of this important resource for a wider variety of visitor and concessioner activities such as wagon rides and guided tours as compared to Alternative A. The Developed Zones would also allow the addition of improved comfort stations, roads, and parking areas. Visitors would be provided with increased access from both the west and the east sides of the Hensley Settlement through the establishment of these Developed Zones. The numbers and types of new facilities in these areas would be constructed in the context of the Historic District, be unobtrusive, and would be limited to avoid potential adverse effects on resources.
  - Creation of a Developed Zone on the west side of the Hensley Settlement would allow for improvement of Shillalah Creek Road and creation of a new, improved, satellite parking area at the base of Brush Mountain, providing visitors with an opportunity to park, and then hike, bike, or ride horses to the Hensley Settlement. The parking area located on top of Brush Mountain immediately adjacent to the west side of the Hensley Settlement could also be paved and/or expanded to provide additional space for guided tour vans.
    Similar to Alternative A, visitors would continue to have the opportunity to participate in NPS guided tours of the Hensley Settlement. There would also be opportunities for concessioners to provide visitor services for Hensley Settlement.
  - Creation of a Developed Zone on the east side of the Hensley Settlement (adjacent to the existing Hensley Settlement Historic District) would provide visitors with an increased potential to access more facilities such as campsites, trails, and Martin's Fork Cabin as compared to Alternative A. In addition, visitors would be provided with increased access to the Shillalah Creek Wildlife Management area and the Kentucky Division of Water lands located adjacent to the park.

- Visitors would continue to use facilities at the Civic Park Area near Sand Cave and White Rocks. This area would be managed as a Developed Zone.

Visitor Experience

Under Alternative B, visitors would have greater access to the park as compared with Alternative A. This would be accomplished through construction and operation of a few limited new facilities at Fern Lake, the Wilderness Campground, and the Hensley Settlement. These facilities would be constructed within the newly defined Developed Zone. The goal would be to provide visitors with increased access while at the same time protecting resources through regulatory compliance, NPS policies, sustainable practices, and sensitivity to cultural and natural resources.

Visitor orientation services would continue at the NPS visitor center, and at the Daniel Boone Wilderness Road Visitor Contact Station. Interpretive activities would continue in selected areas of the park, with special emphasis at Hensley Settlement, the Daniel Boone Wilderness Road Contact Station, guided walks, and guided cave tours. A variety of popular interpretive and education programs (e.g., guided hikes, seasonal and school programs), and some special events would occur, similar to existing conditions/Alternative A. Opportunities to enjoy recreational activities would continue to exist, with increased opportunities for access in a variety of settings. Roads, trails, campgrounds, and primitive campsites would all remain essentially the same. Access to the Hensley Settlement would be expanded as well as access to Fern Lake. The trail system would be expected to be expanded with increased opportunities for connectivity. Bicycle use would continue to be allowed on roads used by motor vehicles, or in designated areas. Visitors would be able to continue to enjoy the facilities currently offered, as well as the new visitor services provided as described above.

Resource Condition or Character

Additional resource management effort would be required to maintain the condition and character of natural and cultural resources in the park, including the Fern Lake area. Additional resource management (four full-time equivalents) would also be required to maintain the condition and character of cultural resources at the Hensley Settlement and Cumberland Gap Historic District since increased numbers of visitors could potentially be using the facilities in the expanded Developed Zones on the west and east sides of this zone. Resource management efforts needed to maintain resource conditions and character in all other areas of the park would otherwise be similar to Alternative A.

Facilities

The existing facilities identified under Alternative A would remain and would be managed in the context of the zone in which they are located. Other future, additional facilities may be appropriate as prescribed by zone as well. Facilities proposed under Alternative B are described by zone in the text that follows, and include the following:

- A rustic rain shelter with interpretive exhibits would be constructed in the Developed Zone east of the Hensley Settlement.
- A 50'x25' picnic shelter with 4 tables (compliant with Americans with Disabilities Act) would be added in the Developed Zone at Fern Lake.
- A composting comfort station would be constructed in the Developed Zone at Fern Lake.
- A boat house and two residences that would be acquired in the future would be stabilized and maintained.
- New electrical hookups would be added to the existing sites in loop D at the Wilderness Road Campground.

- A new satellite parking area would be constructed at the base of Brush Mountain to allow increased access for hikers, bikers and horseback riders to the Hensley Settlement via the gated Shillalah Creek Road. However, access to Shillalah Creek Road would continue to be restricted to NPS guided tours, or potentially concessioner use in the future.
- The parking area located on top of Brush Mountain immediately adjacent to the west side of the Hensley Settlement could also be improved to provide additional space for guided tour vans. The road would continue to be gated, with additional limited access.

Outreach/Education and Partnering Programs

Under Alternative B, the level of public outreach, education and partnering would be the same as Alternative A. No additional staffing would be proposed.

Management Zones and Uses

Alternative B would include four new zones: the Cultural Resources Zone, the Natural Zone, the Recommended Wilderness Zone, and the Developed Zone (Figure 7). Developed zones would be established in the area around Fern Lake, the Gap, and Hensley Settlement for the purpose of providing increased access. A Cultural Resource Zone would be established next to the Developed Zone at the Gap as well as the Hensley Settlement. A Recommended Wilderness Zone would incorporate the areas identified as potential and recommended wilderness, encompassing the 14,091 acres. This zoning prescribes distinctive wilderness management efforts to maintain the wilderness characteristics into the future.

Some of the major features of each zone for Alternative B are described below. Site specific plans would be developed during future implementation.

Developed Zone

- **Park Headquarters and Visitor Center Area.** The Developed Zone designated for the park headquarters and visitor center area in Alternative B would be expanded to include Pinnacle Road. The visitor center and surrounding grounds would **continue** to be used as they are under Alternative A. This zoning would allow for more facilities to be constructed in a larger Developed Zone as compared with Alternative A.. Specific facilities for this area have not yet been identified. The following types of facilities would be considered appropriate in this zone: paved parking areas, roads, additional picnic tables or shelters, composting comfort stations, maintenance facilities, and paved and unpaved trails.
- **Developed Zone at Fern Lake.** A Developed Zone would be designated at the eastern end of the lake to allow for more accessibility and to allow for limited visitor facilities at Fern Lake. These would include a new composting comfort station, a 50’ x 25” picnic shelter with four picnic tables (compliant with the American with Disabilities Act), and stabilization and maintenance of the existing boat house and two residences that would be acquired in the future. Any new facility siting and design would address sensitivity to watershed management efforts and protect the water quality of Fern Lake.
- **Sugar Run**. This area would be designated as a Developed Zone under Alternative B (similar to Alternative A); however, the zone would be expanded to include Kentucky Route 988 from the Gap area to Sugar Run. Specific facilities for this area have not yet been identified, but could include paved parking areas, additional picnic tables or shelters, trails, and a composting comfort station. Pinnacle Road has been included in the Developed Zone to allow for similar types of new facilities.
- **Civic Park.** Visitors would continue to use facilities at the Civic Park Area near Sand Cave and White Rocks. This area would be managed as a Developed Zone, allowing for visitor support services such as road access, parking area, and comfort station.

Insert Figure 7. Alternative B

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- **Wilderness Road Campground and Picnic Area**. The expanded Developed Zone in this area (compared to Alternative A) would allow for increased connectivity to the Gap, Cumberland Trail, Pine Mountain Trail, and the Wilderness Road Trail, as well as the town of Cumberland Gap. It would also allow for increased recreational vehicle capacity by adding electrical service to campground Loop D.
- **Developed Zone west of Hensley Settlement**. Alternative B would result in conversion of a portion of the Natural Environmental Feature Subzone under Alternative A on the west side of the Hensley Settlement south of Shillalah Creek Road to a Developed Zone. Construction and operation of additional visitor facilities in this new zone would provide increased access to the Hensley Settlement. New facilities in this area would include a satellite parking area at the base of Brush Mountain on Shillalah Creek Road, and improvement of the parking area adjacent to the west side of the Hensley Settlement south of Shillalah Creek Road. to accommodate additional vehicles,. The new satellite parking area at the base of Brush Mountain would provide visitors with an opportunity to park, and then hike, bike, or ride horses to the Hensley Settlement, or choose potential concession services for access in the future. Prior to construction of any new facilities, an environmental assessment would be completed to assure that potential adverse effects on natural and cultural resources are avoided or minimized.
- **Developed Zone east of Hensley Settlement.** Alternative B would result in conversion of a portion of the Natural Environmental Feature Subzone under Alternative A on the east side of the Hensley Settlement to a new Developed Zone. This would allow for increased access to the Shillalah Creek Wildlife Management Area and the Kentucky Water Division lands located adjacent to the park in this area. Limited new facilities would be provided, however, while maximizing resource protection.
- **Developed Zone at Fern Lake.** Alternative B would create a 32 acre Developed Zone at the southeastern end of the lake. This would allow for increased visitor access and the potential for additional facilities for visitors. New facilities would include a 50' x 25" picnic shelter with four picnic tables (compliant with the American with Disabilities Act), and a new composting comfort station. Stabilization and maintenance of a boat house and two residences that would be acquired in the future would also be proposed.

Natural Zone

- **Fern Lake**. The areas of Fern Lake and the surrounding watershed outside the area designated as a Developed Zone would be designated as part of the Natural Zone.
- **Other areas**. The area north of Cumberland Gap Historic District would be designated Natural Zone, in addition to the area surrounding Hensley Camp, the area north of Civic Park including Sand Cave and White Rocks, Chadwell Gap trailhead and areas along the southeastern border.

Recommended Wilderness Zone

- **Recommended Wilderness**. The 14,091-acre Recommended Wilderness Zone incorporates those areas identified as Recommended and Potential Wilderness. These areas would be managed as wilderness while awaiting final classification as designated Wilderness from the Department of the Interior or congressional action. The park would continue to maintain the existing wilderness character into the future, as directed by Congress. The extent of the wilderness area would remain the same as Alternative A.

Cultural Resource Zone

- **Hensley Settlement**. A portion of the Natural Environmental Feature Subzone under Alternative A on the west side of the Hensley Settlement north of Shillalah Creek Road would be converted to a Cultural Resource Zone. This would result in the creation of a 174 acre Cultural Resource Zone

in this area, as compared with the existing 139 acre Hensley Settlement Historic District under Alternative A.

- **Cumberland Gap Historic District**. The Cumberland Gap Historic District would continue to be designated as a Cultural Resource Zone and would be the same acreage as the historical zone designated under Alternative A (434 acres).

ALTERNATIVE C, THE PREFERRED ALTERNATIVE

Management Concept

The concept of Alternative C is to provide greater opportunities for visitor access and facilities in the park as compared to Alternatives A and B, as well as increased levels of education, outreach, and formalized partnering efforts. The numbers and types of new facilities would be limited, similar to Alternative B, to protect natural and cultural resources in the park. New facilities would be proposed within the context of their location within the management zone. Sustainable designs and practices would be implemented wherever possible, and new facilities would be unobtrusive.

Appropriate Kinds and Levels of Visitor Uses

There is the potential for more and different types of visitor uses under Alternative C as compared to Alternative A. This would be achieved primarily by having larger Developed Zones in Alternative C, increased potential for new facilities, education, and outreach programming than Alternative A, and an increase in formalized partnering programs. The following specific changes in kinds and levels of visitor use would be featured under Alternative C.

- Electrical hookups would be provided in the Wilderness Road campground, Loop D, which would allow increased recreational vehicle use.
- Facilities for horse use in the park would be increased by modifying two or three of the Wilderness Road Campground sites to accommodate horse trailers.
- Access to Fern Lake would be increased by creating a Developed Zone along the eastern end of the lake that would connect to the Developed Zone around the visitor center at the Gap. Additional park facilities, such as hiking trails or maintenance roads, could be constructed within this larger Developed Zone. A Natural Zone would also be established to incorporate the rest of the Fern Lake watershed.
- Creation of a Developed Zone on the west side of the Hensley Settlement would allow for improvement of Shillalah Creek Road by creation of a new parking area at the base of Brush Mountain and paved parking immediately adjacent to the Hensley Settlement. These changes would allow increased access to the Hensley Settlement, with a larger Developed Zone than Alternatives A and B.
- Creation of a Developed Zone on the east side of the Hensley Settlement (adjacent to the existing Hensley Settlement Historic District) would provide visitors with an increased potential to access more facilities such as campsites, trails, and Martin's Fork Cabin as compared to Alternative A. In addition, visitors would be provided with increased access to the Shillalah Creek Wildlife Management area and the Kentucky Division of Water lands located adjacent to the park.
- Education and outreach programs would be expanded under Alternative C.
- An increase in formalized partnering efforts would be instituted under Alternative C compared to Alternative A.

Other features of this alternative with regard to appropriate kinds and levels of visitor uses would be similar to Alternative B.

Visitor Experience

Under Alternative C, visitors would have greater access to the park as compared with Alternative A. This would be accomplished through the construction and operation of several new but limited numbers of facilities at Fern Lake, the Wilderness Campground, and in the vicinity of the Hensley Settlement. These facilities would be constructed within a newly designated Developed Zone. Because the Developed Zone is larger than the same zone under Alternative B, visitors would have greater access to the park as compared with Alternative B. However, the goal would still be to provide visitors with increased access while at the same time protecting resources through regulatory compliance and NPS policies. Visitors would also experience an increased level of education, outreach and formalized partnering efforts under Alternative C as compared with Alternative A.

Visitor orientation services would continue at the NPS visitor center, and at the Daniel Boone Wilderness Road Visitor Contact Station. Interpretive activities would continue in selected areas of the park, with special emphasis at Hensley Settlement, the Daniel Boone Wilderness Road Contact Station, guided walks, and guided cave tours. Opportunities for participating in interpretive and education programs (e.g., guided hikes, seasonal and school programs), and some special events would increase, compared to Alternative A. Opportunities to enjoy recreational activities would increase, with increased opportunities for access in a variety of settings, that may also increase opportunities for concession activity. Access to the Hensley Settlement would be expanded as well as access to Fern Lake. The trail system would be expected to be expanded with increased opportunities for connectivity. Bicycle use would continue to be allowed on roads used by motor vehicles, or in designated areas. Visitors would be able to continue to enjoy the facilities currently offered, as well as the new visitor services provided as described above.

Resource Condition or Character

Under Alternative C, the Developed Zone at Fern Lake and the Hensley Settlement would be larger than in Alternatives A or B, requiring additional efforts to manage cultural and natural resources to maintain resource conditions and character. Levels and types of resource management in the Natural Zone and Wilderness Zone would otherwise be similar to that required by Alternative B.

Facilities

The following facilities would be appropriate under Alternative C:

- A new composting comfort station would be constructed immediately to the east of the Hensley Settlement.
- A rustic rain shelter with interpretive exhibits would be constructed in the Developed Zone east of the Hensley Settlement.
- New electrical hookups would be added to the existing sites in loop D at the Wilderness Road Campground.
- The boat house and two residences at Fern Lake would be stabilized and maintained for public use.
- Two to four recreational vehicle sites would be modified for horse use at the Wilderness Road Campground.
- Road access to Fern Lake would be improved for park administration uses.
- The existing bridge connecting Fern Lake to the park maintenance area would be improved.
- A 50’ x 25’ picnic shelter with four tables (compliant with Americans with Disabilities Act) would be added in the Developed Zone at Fern Lake.
- A new composting comfort station would be constructed for visitors at the Fern Lake area.

- A new satellite parking area would be constructed at the base of Brush Mountain to allow increased access to the Hensley Settlement via Shillalah Creek Road.
- An enlarged parking area near the west side of the Hensley Settlement would be constructed to accommodate additional NPS tour vehicles.

These additional facilities would allow for increased access to the park by visitors, and would have a limited effect on park resources due to implementation of sustainable designs and practices and avoiding resource impacts with unobtrusive placement of facilities.

Outreach/Education and Partnering Programs

Under Alternative C, a formalized public outreach, education, and partnering program would be implemented. Alternative C would involve, for example, further expansion of the existing education programs and outreach programs, increased linkages with state and local park resources, and increasing the amount of educational information available to the public both via the Internet, published materials, and interpretive activities. In addition, Alternative C would feature expanded formalized partnering with organizations in the area and region. For example, under Alternative C, an expanded formalized caving partnering program would be possible.

Management Zones and Uses

Alternative C would include four new zones: the Cultural Resources Zone, the Natural Zone, the Recommended Wilderness Zone, and the Developed Zone (Figure 8). Developed zones would be established in the area around Fern Lake, the Gap, and the Hensley Settlement for the purpose of providing increased access. The Developed Zone at Fern Lake would be connected to the Developed Zone in the vicinity of the visitor's center to provide increased access. A Recommended Wilderness Zone would incorporate the areas identified as potential and recommended wilderness (14,091 acres).

A Cultural Resource Zone would be established next to the Developed Zone at the Gap. The total area of the Developed Zone in Alternative C would be over twice as large as the Development Zone in Alternative A, and slightly larger than the Developed Zone in Alternative B. The following is a summary of the features of the zones under Alternative C. Site-specific plans would be developed during future implementation.

Developed Zone

- **Park Headquarters and Visitor Center Area**. The Development Zone under Alternative A that includes the park headquarters and the visitor center would be expanded to include Pinnacle Road. To provide increased access and connectivity, the Developed Zone at the park headquarters and visitor center area would be connected to the Developed Zone at Fern Lake. No structural changes to the existing visitor center would be made under Alternative C, however. The expanded Developed Zone would create additional opportunities for new facilities. Specific facilities for this area have not yet been identified, but could include paved parking areas, roads, additional picnic tables or shelters, composting comfort stations, maintenance facilities, and paved and unpaved trails.
- **Sugar Run**. This area would be designated as a Developed Zone under Alternative C and would be expanded to include Kentucky Route 988 from the Gap area to Sugar Run. Specific facilities for this area have not yet been identified, but could include paved parking areas, additional picnic tables or shelters, trails, and a composting comfort station. Pinnacle Road has been included in the Developed Zone to allow for similar types of new facilities.

Insert Figure 8. Alternative C (Preferred Alternative)

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- **Wilderness Road Campground and Picnic Area**. The expanded Developed Zone would provide increased connectivity to the Gap, Cumberland Trail, Pine Mountain Trail, and the Wilderness Road Trail, as well as the town of Cumberland Gap. Recreational vehicle capacity would be increased by adding electrical service to Wilderness Road campground Loop D. In addition, Alternative C would feature modification of two to four campground sites to accommodate horses.
- **Developed Zone west of Hensley Settlement.** Alternative C would result in conversion of a portion of the existing Natural Environmental Feature Subzone on the west side of the Hensley Settlement north of Shillalah Creek Road to a new 127-acre Developed Zone. Construction and operation of additional visitor facilities in this new zone would provide increased access to the Hensley Settlement. New facilities in this area would include a satellite parking area at the base of Brush Mountain on Shillalah Creek Road to accommodate additional tour vans, and improvement of the parking area on the west side of the Hensley Settlement, north of Shillalah Creek Road. Prior to construction, an environmental assessment of new facilities in this area would be completed to assure that potential adverse effects on natural and cultural resources are avoided or minimized.
- **Developed Zone east of Hensley Settlement**. Alternative C would convert a portion of the existing Natural Environmental Feature Subzone on the east side of the Hensley Settlement to a new 131-acre Developed Zone. New facilities would include a composting comfort station and a rustic rain shelter. New facilities in this area would provide increased access to the Shillalah Creek Wildlife Management Area and the Kentucky Water Division lands located adjacent to the park in this area, as well as to the Hensley Settlement. Prior to construction, an environmental assessment area would be completed to assure that potential adverse effects on natural and cultural resources are avoided or minimized.
- **Developed Zone at Fern Lake.** Alternative C would create an 82 acre Developed Zone at the southeastern end of the lake to provide increased access through construction of additional facilities. These would include improved road access, improvement of the existing bridge connecting Fern Lake to the park's maintenance area, a 50' x 25" picnic shelter with four picnic tables (compliant with the American with Disabilities Act), stabilization and maintenance of a boat house and two residences that would be acquired in the future, and a new composting comfort station.
- **Civic Park.** Visitors would continue to use facilities at the Civic Park Area near Sand Cave and White Rocks. This area would be managed as a Developed Zone, allowing for visitor support services such as road access, parking area, and comfort station.

Natural Zone

- **Fern Lake**. Fern Lake and the surrounding watershed would be designated as part of the Natural Zone.
- **Other areas**. The area north of Cumberland Gap Historic District would be designated Natural Zone, in addition to the area surrounding Hensley Camp, the area north of Civic Park including Sand Cave and White Rocks, Chadwell Gap trailhead and areas along the southeastern border.

Recommended Wilderness Zone

- **Recommended Wilderness**. The 14,091-acre Recommended Wilderness Zone incorporates those areas identified as Recommended and Potential Wilderness. These areas would be managed as wilderness while awaiting final classification as designated Wilderness from the Department of the Interior or congressional action. The park would continue to maintain the existing wilderness character into the future, as directed by Congress. The extent of the wilderness area would remain the same as Alternative A.

Cultural Resource Zone

- **Hensley Settlement**. The Hensley Settlement would be designated as a 158-acre Cultural Resource Zone as compared with a 139-acre historical zone designated at Hensley Settlement under Alternative A.
- **Cumberland Gap Historic District**. The Cumberland Gap Historic District would be designated as a Cultural Resource Zone and would be the same size as the existing historical zone designated under Alternative A (434 acres).

SUMMARY COMPARISON OF THE ALTERNATIVES

Table 7 provides a comparison of the major features of the alternatives. The comparison is based on the major issue categories developed during the public scoping of the general management plan. The alternatives have been designed to respond to these issues.

Table 7. Comparison of the Features of the Alternatives Based on Major Issue Categories Identified During the Public Scoping Process

Major Issue Category	Alternative A – Continue Present Management Practices	Alternative B	Alternative C
Increase Access	613 acre Development Zone (total)	1,299 acre Developed Zone	1,365 acre Developed Zone
	Fern Lake included in park but not zoned	32 acre Developed Zone at Fern Lake	82 acre Developed Zone at Fern Lake
	344 acre Development Zone at campground	689 acre Developed Zone at campground including connecting trails to outside of park	Same as Alternative B
	3 acre Development Zone east of Hensley	131 acre Developed Zone east of Hensley	Same as Alternative B
	7 acre Development Zone west of Hensley Settlement	111 acre Developed Zone west of Hensley Settlement	127 acre Developed Zone west of Hensley Settlement
	No campground sites for horses	Same as Alternative A	Allow horse trailer use in campground by modifying 2-3 campground sites
Increase Access (Continued)	212 acre Development Zone at visitor center	255 acre Developed Zone at visitor center	Same as Alternative B
	32 acre Development Zone at Sugar Run	66 acre Developed Zone at Sugar Run	Same as Alternative B
	433 acre Historical Zone at Gap	433 acre Cultural Resource Zone at Gap	Same as Alternative B
Protection of Resources	Addition of Fern Lake watershed and lands to the park provides protection of the lake, water supply, watershed, and the scenic vista from the Pinnacle. Hensley Settlement, the Gap, the Recommended Wilderness Area, and other park resources continue to be protected.	Addition of Fern Lake watershed and lands to the park provides augmented protection of the lake, water supply, watershed, and the scenic vista from the Pinnacle through a new zoning plan. Hensley Settlement, the Gap, the Recommended Wilderness Area, and other park resources continue to be protected.	Addition of Fern Lake watershed and lands to the park provides augmented protection of the lake, water supply, watershed, and the scenic vista from the Pinnacle through a new zoning plan. Additional protection of natural and cultural resources through expanded and more formalized education, outreach and partnering programs

Table 7. Comparison of the Features of the Alternatives Based on Major Issue Categories Identified During the Public Scoping Process (Continued)

Major Issue Category	Alternative A – Continue Present Management Practices	Alternative B	Alternative C
Increase Education And Outreach	Maintain current level of education and outreach	Same level of education and outreach as Alternative A	Expand education and outreach programs as compared with Alternative A (for example: additional events, programs; Fern Lake opportunities)
Increase Partnering	Maintain current level of partnering	Same level as Alternative A	Expand formalized partnering as compared with Alternative A (for example: Cave Research Foundation; states; trail organizations)
Socioeconomics	The park will continue to benefit the local economy by bringing visitors to the area. Operation of the Southern Highland Craft Guild would continue to provide economic benefits. Continuation of existing education, outreach, and partnering programs would provide economic benefits to the area. There are no concessions operating in the park, and this would likely continue in the same manner.	Similar to Alternative A, however, there would be increased opportunities for concession and commercial services.	Expand education, outreach and partnering programs as compared with Alternative A would provide additional opportunities for economic benefits for the area by potentially drawing more visitors as compared with Alternative A. Increased opportunities for concession and commercial services.
Staff Increase	4 Full Time Equivalent Staff added	4 Full Time Equivalent Staff added	7.2 Full Time Equivalent Staff added

Note: Acreages are approximate. Acreages under Alternative A are not directly comparable because zoning practices were different and did not include roads, nor encompass as large an area.

COMPARATIVE COST ANALYSIS

The actual cost of implementing the approved general management plan will ultimately depend on future funding and service wide priorities over the life of the plan, as well as the ability to partner with other agencies or groups. Approval of a general management plan does not guarantee that funding and staffing needed to implement the plan will be forthcoming. Funding for capital construction improvements is not currently shown in NPS construction programs. It is not likely that all capital improvements will be totally implemented during the life of the plan. Larger capital improvements may be phased over several years.

Cost estimates were developed through an evaluation of capital and annual operating costs for each of the alternatives. The estimates in this section regarding the general costs of implementing the alternatives were developed based on fiscal year 2006 dollars using NPS and industry standards to the extent available. These estimates are not intended for budgeting purposes.

Range of Annual Costs

The range of annual costs includes personnel, maintenance, and operations costs. The park's operations costs for fiscal year 2006 were $3,031,000. The existing staffing level is approximately 54 full time permanent employees and 22 temporary employees.

The costs for staffing for each of the alternatives have been adjusted to address the need for additional fulltime employees, or equivalents, for the proposed increase in interpretive and educational services and to provide essential protection, maintenance, and visitor services for the proposed new facilities at Fern Lake and Hensley Settlement. Additional personnel are also required to address deficiencies in trail maintenance. Due to the additional requirements associated with Fern Lake, it is estimated that an additional 4.0 fulltime equivalent employees would be required for Alternatives A and B. Under Alternative C, it is estimated that 7.2 additional fulltime equivalent staff would be required to address needs at Fern Lake and additional interpretation functions.

The annual costs for Alternative A would be approximately $3,610,000, while the annual costs for Alternative B and Alternative C would be approximately $3,610,000 and $3,850,000, respectively. The actual cost of staffing each alternative would vary according to the government service rating, experience level, and education and professional certifications as well as the deployment of staff needed to provide minimum levels of satisfactory park services.

One-Time Costs

The range of initial one-time costs including construction, facility modifications, general improvements and natural and cultural resource studies and plans identified for each alternative are outlined on Table 8. Certain one-time costs are common to all the alternatives. For example, under Alternatives A, B, and C, composting comfort stations would be constructed at Fern Lake. Other one-time costs would be proposed for individual alternatives, such as roadway and bridge improvements near Fern Lake, which are only proposed under Alternative C.

Table 8. Cost Summary for Each Alternative

	Alternative A: No Action	Alternative B	Alternative C: The Preferred Alternative
Annual Costs (Includes personnel, maintenance, and operations) FY06 Operations Costs ($3,031,000)	$3,610,000 4.0 additional Full-Time Equivalents	$3,610,000 4.0 additional Full-Time Equivalents	$3,850,000 7.2 additional Full-Time Equivalents
Initial One - Time Costs (Includes construction, general improvements, plans and studies)	$1,119,000 Projects include: • Install composting comfort station at Fern Lake • Resource plans and studies	$1,435,000 Projects include: • All projects, resource plans, and studies listed under Alternative A • Add electrical hookups in the RV campground • Construct rustic rain shelter with interpretive exhibits east of the Hensley Settlement • Construct picnic shelter at Fern Lake	$2,360,000 Projects include: • All projects, resource plans, and studies listed under Alternatives A and B • Install composting comfort station on east side of Hensley Settlement • Modify 2 to 3 RV campground sites for horse trailers • Improve road and bridge access to Fern Lake

Additional Assumptions:
1. The base year for all cost estimates is 2006.
2. The cost estimates have been developed using NPS and industry standards to the extent available, and are not intended for budgeting purposes.
3. Annual operating costs are inclusive of personnel, equipment, vehicles, materials and supplies, utilities, and other services. Cost and staffing estimates assume that the alternative is fully implemented as described in the narrative.

Alternative C would require the highest initial one-time costs (approximately $2.4 million) since the greatest amount of new facility construction and modification would be proposed under this alternative. One-time costs for Alternative B are estimated to be $1.4 million. One-time costs for

Alternative A include resource management plans and studies as well as installing a composting comfort station at Fern Lake, and are estimated at $1.1million.

The types of studies and plans proposed under all alternatives include: archeological inventories of the park, cultural landscape studies and reports, museum collection management and emergency plan, resource stewardship strategy, and other management plans and inventories.

All cost estimates are for recommended improvements and for education and visitor services; they do not reflect cost sharing anticipated from other federal, state, territory, or municipal agencies or from the private sector.

ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

Table 9 provides a summary of the environmental consequences of the implementation of each of the three alternatives. Chapter 4 provides a detailed assessment of the effects of each of the alternatives.

Table 9. Summary of Impacts of the Alternatives

Impact Category	Alternative A	Alternative B	Alternative C: Preferred Alternative
Natural Resources			
Geological – Cliffs, Caves and Karst	Long- and short-term, negligible and adverse Cumulative: Long- and short-term, negligible and adverse	Long- and short-term, negligible to minor and adverse Cumulative: Long- and short-term, negligible to minor and adverse	Same as Alternative B Cumulative: long- and short-term, negligible to minor and adverse
Soils	Long- and short-term, negligible and adverse Cumulative: Long- and short-term, minor and adverse	Long- and short-term, minor and adverse Cumulative: Long- and short-term, minor and adverse	Same as Alternative B Cumulative: Same as Alternative B
Water Quality	Short-term, negligible and adverse Cumulative: Long- and short-term, minor and adverse	Long- and short-term, minor adverse Cumulative: Same as Alternative A	Same as Alternative B Cumulative: Same as Alternative A
Fisheries/ Aquatic Resources	Long- and short-term, negligible and adverse Cumulative: Long- and short-term, minor and adverse	Long- and short-term, minor and adverse Cumulative: Same as Alternative A	Same as Alternative B Cumulative: Same as Alternative A
Wetlands	Long- term, negligible and beneficial Cumulative: Long- and short-term, negligible and beneficial	Long- and short-term, minor and adverse Cumulative: Long- and short-term, minor and adverse	Same as Alternative B Cumulative: Same as Alternative B

Table 9. Summary of Impacts of the Alternatives (Continued)

Impact Category	Alternative A	Alternative B	Alternative C: Preferred Alternative
Vegetation –Native Plant Communities	Long-term, moderate and beneficial Cumulative: Long-term, moderate and beneficial	Long- and short-term, minor and adverse Cumulative: Long- and short-term, moderate and beneficial	Same as Alternative B Cumulative: Long- and short-term, moderate and beneficial
Species of Special Concern	Long- and short-term negligible and adverse, this would equate with a "no effect" determination by the U.S. Fish and Wildlife Service Cumulative: Long- and short-term, minor and adverse, this would equate with a "may affect/not likely to adversely affect" determination by the U.S. Fish and Wildlife Service	Red cockaded woodpecker and the gray bat: long-term, negligible and adverse, which would equate to a "no effect" USFWS determination. Indiana bat: long-term, minor, adverse effect, which would equate to a "may affect, not likely to adverse affect" determination Blackside dace: long-and short-term, negligible, adverse effect which would equate with a "no effect" USFWS determination. Cumulative: Long-term, minor and adverse which would equate to a "may affect/not likely to adversely affect" USFWS determination	Same as Alternative B with the exception of the gray bat, which would have long-term, minor and adverse effects. This equates to "no effect" and/or "may affect/not likely to adversely affect." Cumulative: Same as Alternative B
Soundscape			
Soundscape	Long- and short-term, negligible, and adverse Cumulative: Long- and short-term, minor, and adverse	Long- and short-term, minor, and adverse Cumulative: Long- and short-term minor, and adverse	Long- and Short-term, minor and adverse Cumulative: Same as Alternative A
Socioeconomics			
Socioeconomics	Long- and short-term, moderate and beneficial Cumulative: Long-and short-term, moderate and beneficial	Long- and short-term, moderate, and beneficial Cumulative: Same as Alternative A	Long- and short-term, negligible to moderate and beneficial Cumulative: Same as Alternative A

Table 9. Summary of Impacts of the Alternatives (Continued)

Impact Category	Alternative A	Alternative B	Alternative C: Preferred Alternative
Cultural Resources*			
Archeological Resources	Lack of updated management zoning and visitor use: Possible long-term, minor to moderate, adverse effects in selected areas Continuing NPS management and protection of sites: Possible long-term, minor to moderate benefits Cumulative: long-term, moderate and adverse	Potential long-term, negligible to minor, adverse effects on archeological resources from development of new access routes, parking, visitor use, and natural processes. Mitigating measures would help reduce the potential for effects from development proposed in the vicinity of the Hensley Settlement. Cumulative: Same as Alternative A	Educational, interpretive, outreach and management efforts: Possible long-term moderate beneficial effects Increased development and visitor use: Possible long-term, minor adverse effects on selected archeological resources Cumulative: Same as Alternative A
Cultural Landscapes, Including Historic Buildings, Structures, and Districts	Possible long-term, negligible to minor adverse effect resulting from lack of funding and staffing. Long- and short-term, minor to moderate benefit resulting from continuation of interpretive, outreach, education, and partnering programs. Cumulative: long-term, moderate, and adverse	Possible long- and short-term, minor adverse effects resulting from development of new Park facilities. Possible short-term minor adverse effects on landscape vegetation from facility improvements. Possible long-term, minor to moderate benefits from continuing existing management practices. Cumulative: Same as Alternative A	Possible long-term moderate benefit from increased and formalized public outreach, education, and partnering. Possible long-term minor, adverse effect of construction, operation, from use of new facilities Cumulative: Same as Alternative A
Ethnographic Resources, Traditional Cultural Properties, and Values	Possible long-term, minor, beneficial Cumulative: Long term, moderate adverse effects	Possible long- term, minor, adverse effects due to facility construction, operation, and use Long-term, moderate, and beneficial effects from providing access to remembered and valued places and by continuing interpretation of traditional cultural resources and practices. Cumulative: Long-term, moderate and adverse effects	Possible long-term, minor adverse, and moderate beneficial Cumulative: Long-term, moderate and adverse

* Impact intensities listed in this table are a defined by National Environmental Policy Act criteria. All Section 106 impacts are defined as potentially having an adverse effect, since no specific project designs are not yet available.

Table 9. Summary of Impacts of the Alternatives (Continued)

Impact Category	Alternative A	Alternative B	Alternative C: Preferred Alternative
Visitor Use and Experience			
Visitor Use and Experience	Long-term, minor and beneficial effect for those visitors who do not wish to see any changes in the park Long-term, moderate, and adverse effect for those who prefer more opportunities for a variety of experiences, partnerships, and access Cumulative: Long-and short-term, moderate to major, and beneficial	Long-term, moderate to major, and beneficial to visitors who prefer more opportunities for a variety of experiences, partnerships, and access Long-term, moderate, and adverse for those visitors who do not wish to see any changes in the park Cumulative: long-and short-term, major, and beneficial	Same as Alternative B Cumulative: Same as Alternative B
Scenic Resources and Visual Quality			
Scenic Resources and Visual Quality	Long-and short-term, minor, beneficial Cumulative: Long-and short-term, major, beneficial	Long- and short-term, minor, and adverse Cumulative: long-and short-term, minor and adverse	Same as Alternative B Cumulative: Same as Alternative B
Transportation			
Transportation	Long-term, minor, and adverse Cumulative: Long- and short-term, major, and beneficial	Long-term, minor, and beneficial Cumulative: Same as Alternative A	Long-term, moderate, and beneficial Cumulative: Same as Alternative A
Park Operations			
Park Operations	Long-term, minor, and adverse Cumulative: Long- and short-term, moderate, and adverse	Same as Alternative A Cumulative: Same as Alternative A	Long-term, moderate, and beneficial Cumulative: Long- and short-term, minor, and adverse
Concessions and Commercial Services			
Concessions and Commercial Services	Long-term, moderate and adverse Cumulative: Long- and short-term, minor, and beneficial	Long-term, moderate, and beneficial Cumulative: Same as Alternative A	Same as Alternative B Cumulative: Same as Alternative A

MITIGATION MEASURES COMMON TO ALL ACTION ALTERNATIVES

Congress charged the NPS with managing the lands under its stewardship "in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (National Park Service Organic Act, 16 U.S. Code, §1). As a result, the NPS routinely evaluates and implements mitigation whenever conditions occur that could adversely affect the sustainability of national park system resources.

To ensure that implementation of the action alternatives protects natural and cultural resources and the quality of the visitor experience, a set of mitigation measures would be applied to actions proposed in this plan. The NPS would prepare appropriate environmental review (i.e., those required by the National Environmental Policy Act, National Historic Preservation Act, and other relevant legislation) for these future actions. As part of the environmental review, the NPS would avoid, minimize, and mitigate adverse impacts when practicable. Table 10 summarizes the mitigation measures and best management practices that would apply to the two action alternatives.

In general, new facilities would be sited to minimize impacts on resources, including avoiding steep slopes and sensitive areas and placing new facilities as close to existing disturbances as feasible. Construction activities would implement standard soil erosion and stormwater runoff prevention methods. Standard noise abatement measures would be implemented during park operations and construction activities.

Table 10. Summary of Mitigation Measures and Best Management Practices

Impact Category	Mitigation Measure or Best Management Practice
Soils	Preparation of an environmental assessment, development of detailed mapping, and/or instituting best management practices for new construction activities would minimize impacts. For example, steep slopes would be avoided.
Water Quality	Protection of water quality from potential effects of soil erosion during project construction would be achieved by implementation of best management practices for design and construction.
Fisheries/Aquatic Resources	Protection of fisheries/aquatic resources would be achieved by implementation of best management practices, as specified under water quality. This would protect fisheries and aquatic resources from potential effects of soil erosion during project construction.
Wetlands	Wetlands would continue to be protected by conducting individual environmental assessments for any construction project directly or indirectly affecting wetlands and/or floodplains. Best management practices would also be employed. New facilities would be located to avoid, where possible, wetlands and "Waters of the United States." All potential impacts on wetlands would require state and federal permits.
Vegetation –Native Plant Communities	Completing environmental assessments prior to construction, minimizing tree clearing, avoiding sensitive upland forested areas, and controlling the presence and distribution of invasive species would be practiced. Measures would include use of public education materials, re-vegetation of disturbed areas with native plants, erosion control measures, and barriers to control potential impacts on plants from trail erosion or unauthorized trails. Monitoring for invasive species would be conducted.
Species of Special Concern	Efforts to document and protect these species populations currently present in the park would be completed. Restoration and /or monitoring plans would be developed as warranted. Plans include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques. These issues would be addressed in environmental assessments prepared for each proposed project. Conservation measures would be undertaken to reduce potential impacts to federally listed species or candidate species as needed. These measure would be implemented in consultation with the U.S. Fish and Wildlife Service as appropriate.

Table 10. Summary of Mitigation Measures and Best Management Practices (Continued)

Impact Category	Mitigation Measure or Best Management Practice
Soundscape	Noise impacts from construction of new facilities (under Alternatives B and C) could be minimized by using quieter technology, scheduling park outreach programs around construction, locating stationary noise sources as far from sensitive uses as possible, and requiring that construction equipment not be left for idling any longer than necessary.
Cultural Resources: Archeological Resources	Avoidance and minimization of potentially adverse effects on archeological resources would be achieved by identification, documentation, and evaluation of archeological resources prior to ground disturbing activities. Archeological inventory and evaluation studies would be conducted well in advance of initiating any undertakings and would comply with Sections 106 and 110 of NHPS, 36 Code of Federal Regulations 800, NPS Management Policies 2006, Director's Orders 28 and 28a, Cultural Resource Management, the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, data recovery, curation and conservation as directed in 36 Code of Federal Regulations 79, and Director's Order 12, Conservation Planning, Environmental Impact Analysis and Decision-Making. Ground-disturbing actions would be designed to avoid known archeological sites and historic features, and project-appropriate protective measures such as stop-work provisions and marking work limits would be implemented; the contractor would be apprised of the protective measures during the pre-construction conference. Resource sensitive areas would be identified in the construction operations plan without calling attention to the specific type of resource. Discovered resources would be evaluated for their significance, and if needed, mitigation measures would be developed in consultation with the Kentucky /Tennessee/ Virginia State Historic Preservation officers. Best management practices would emphasize changes in project design to avoid and protect sites and features, and/or could include archeological monitoring of the project and data recovery. All project documentation, including but not limited to plans, photographs, and notes, would be permanently retained in the park's museum collection. To reduce unauthorized collecting, construction personnel would be educated about cultural resources in general and the need to protect and report any cultural resources encountered. Work crews would be instructed regarding the illegality of collecting artifacts or damaging historic features on federal lands to avoid any potential Archeological Resources Protection Act violations.
Cultural Resources: Cultural Landscapes, Historic Buildings, Structures, and Districts	Historic resources would be managed to maintain their resource condition and character. All stabilization/preservation of historic features/structures/landscapes would be conducted in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and character, in accordance with relevant Cultural Landscape Report(s) and Historic Structure Report(s). Studies to identify historic properties and assess effects would be carried out in advance of undertakings and would comply with the requirements of Sections 106 and 110 of the NHPA, 36 Code of Federal Regulations 60, 36 Code of Federal Regulations 800, and NPS Director's Order 28. Mitigation measures may include documentation of built resources in accordance with Historic American Buildings Survey/Historic American Engineering Record standards. Historic structures in the historic districts would be maintained to prevent loss of integrity. To ensure compatibility with the historic scene and to reduce potential development impacts, numbers and types of new facilities would be limited and would be built in the context of the historic district. New structures would be non-intrusive, and would be compatible with the historic structures in their design, scale, massing, workmanship, association, and materials.

Table 10. Summary of Mitigation Measures and Best Management Practices (Continued)

Impact Category	Mitigation Measure or Best Management Practice
	Vegetation that is replaced or planted in the historic districts/cultural landscapes would be carefully chosen, and would accurately replicate the trees and other plants present during the period of significance for that landscape. Measures such as vegetation screening, soil berms, and natural-appearing materials would be used to reduce the intrusive nature of modern structures, trails, paths, and parking when they are developed in historic districts/cultural landscapes. Wherever possible, new trails and roadways would be engineered to follow, and be hidden by, natural landscape contours. Trails and other corridors would be constructed in a manner that would not detract from the cultural landscape or natural scenery, and would be compatible with the park's historic districts. Development of areas outside of the historic districts would be cognizant of the historic nature of the park, and materials, design, scale, massing, and workmanship.
Cultural Resources: Ethnographic Resources, Traditional Cultural Properties, and Values	Appropriate cultural anthropological research is conducted in cooperation with groups associated with Cumberland Gap National Historical Park. The NPS accommodates access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of these sacred sites. NPS general regulations on access to and use of natural and cultural resources in the park are applied in an informed and balanced manner consistent with Cumberland Gap National Historical Park purposes and does not unreasonably interfere with American Indian use of traditional areas or sacred resources and does not result in degradation of Cumberland Gap National Historical Park resources. American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony, and associated funerary objects are consulted when such items may be disturbed or are encountered on Cumberland Gap National Historical Park lands. Access to sacred sites and park resources by American Indians continues to be provided when the use is consistent with park purposes and the protection of resources. All ethnographic resources determined eligible for listing or listed on the national register are protected. If disturbance of such resources is unavoidable, formal consultation with the state historic preservation officer(s), with the Advisory Council for Historic Preservation (as appropriate), and with American Indian tribes is conducted. This consultation is in accordance with the National Historic Preservation Act and the Advisory Council for Historic Preservation implementing regulations (36 Code of Federal Regulations 800) and the November 14, 2008 programmatic agreement among the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. All agencies are required to consult with tribal governments before taking actions that affect federally recognized tribal governments. These consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals. The identities of community consultants and information about sacred and other culturally sensitive places and practices are kept confidential when research agreements or other circumstances warrant.
Geological - Caves and/or Karst	Cave Management Plan would be implemented; partnering with caving associations would continue to protect the life and water quality within caves in the park. Protective measures would be taken to avoid spread of viruses to sensitive bat species.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

In accordance with Director's Order 12, the NPS is required to identify the "environmentally preferred alternative" in all environmental documents, including environmental impact statements (NPS 2001b). The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act, which is guided by the President's Council on Environmental Quality. The Council on Environmental Quality provides direction that the environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act. Each of the management alternatives would effectively manage the park and protect resources. In addition, each has environmental advantages compared to the other, as follows:

1. **Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations**. Alternative A would best protect the environment by limiting the level and intensity of use of the built environment. As the Developed Zone would be expanded to more than double in size for both action alternatives, Alternative A would best satisfy the criteria to "Fulfill the responsibilities as trustee of the environment." All other alternatives would fulfill this criterion to a lesser degree through protection of known natural and cultural resources located in the park. Alternative C would expand partnering, as well as education and outreach, which would broadcast information about the park to an expanded population. This would effectively increase park stewardship and build long term relationships that would benefit the park resources and protection.
2. **Assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings**. Each of the alternatives would equally meet criterion 2 by providing visitors with safe, healthful, productive, esthetically and culturally pleasing surroundings. There would be very few discernable differences across Alternatives.
3. **Attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences**. Alternative C would provide the widest "range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences. . ." since this alternative provides for the greatest increase in visitor access, visitor use and enjoyment, and diversity of experience without degrading resources. The increase in park staff, increased opportunities for interpretive, educational and partnering provided under Alternative C also expands stewardship of the park and increases the potential for volunteerism and means to reach a more diverse, larger audience regarding the benefits of protecting park resources. Unintended or undesirable consequences would be managed by means of monitoring user capacity issues throughout the park and adapting to new or different impacts that may occur in the future. Increased staffing levels would provide personnel to manage the park and provide the desired future conditions and visitor experience within the parameters of the legal mandates.
4. **Preserving important historic, cultural, and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice**. All alternatives preserve important resources in the park, provide for continued protection of cultural and natural resources and continue to manage over 14,000 acres of wilderness for future generations. Alternative C best meets this criterion because it also provides increased opportunities for access, thereby increasing the variety of choice to visit certain areas of the park that were previously more difficult to reach such as the Hensley Settlement, provides opportunities for those with horses to camp in the park, increases opportunity for those who choose to camp in a recreational vehicle, and provides additional opportunities to explore caves and other natural resources. With increased staffing levels, increased formalized partnering efforts, and increased educational programs, visitors would be allowed more activities to participate in, or may choose to prefer experiences of solitude in the

wilderness. Alternative C provides the most opportunity for individual choice, while preserving resources.

5. **Achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities**. Alternative C would provide the best satisfaction of a "balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities." Alternative C contains the largest acreage of Developed Zone of the alternatives and has the highest potential for attracting visitors to the park. More visitors to the park could result in more business for commercial enterprises at the park and in the neighboring areas, as well as the potential for new concessions or other commercial operations in the park. Increased communication and partnering under Alternative C would improve educational opportunities to promote the benefits of sustainable practices, resource protection and increase park stewardship.
6. **Enhancing the quality of renewable resources and approaching the maximum attainable recycling of non-renewable resources (National Environmental Policy Act, 1969).** Alternative A would best meet this criterion because it would feature the least amount of construction of new facilities that could affect renewable resources such as drinking and groundwater supplies, surface water quality and natural vegetation. Alternative B and C would maintain existing conditions or result in localized reductions in the quality of renewable resources through construction and subsequent alteration or loss of habitat. Where new facilities would be constructed, sustainable design principles and practices would be used where applicable, thereby maximizing recycling of materials. None of the alternatives proposes a long-term change in the use of depletable resources.

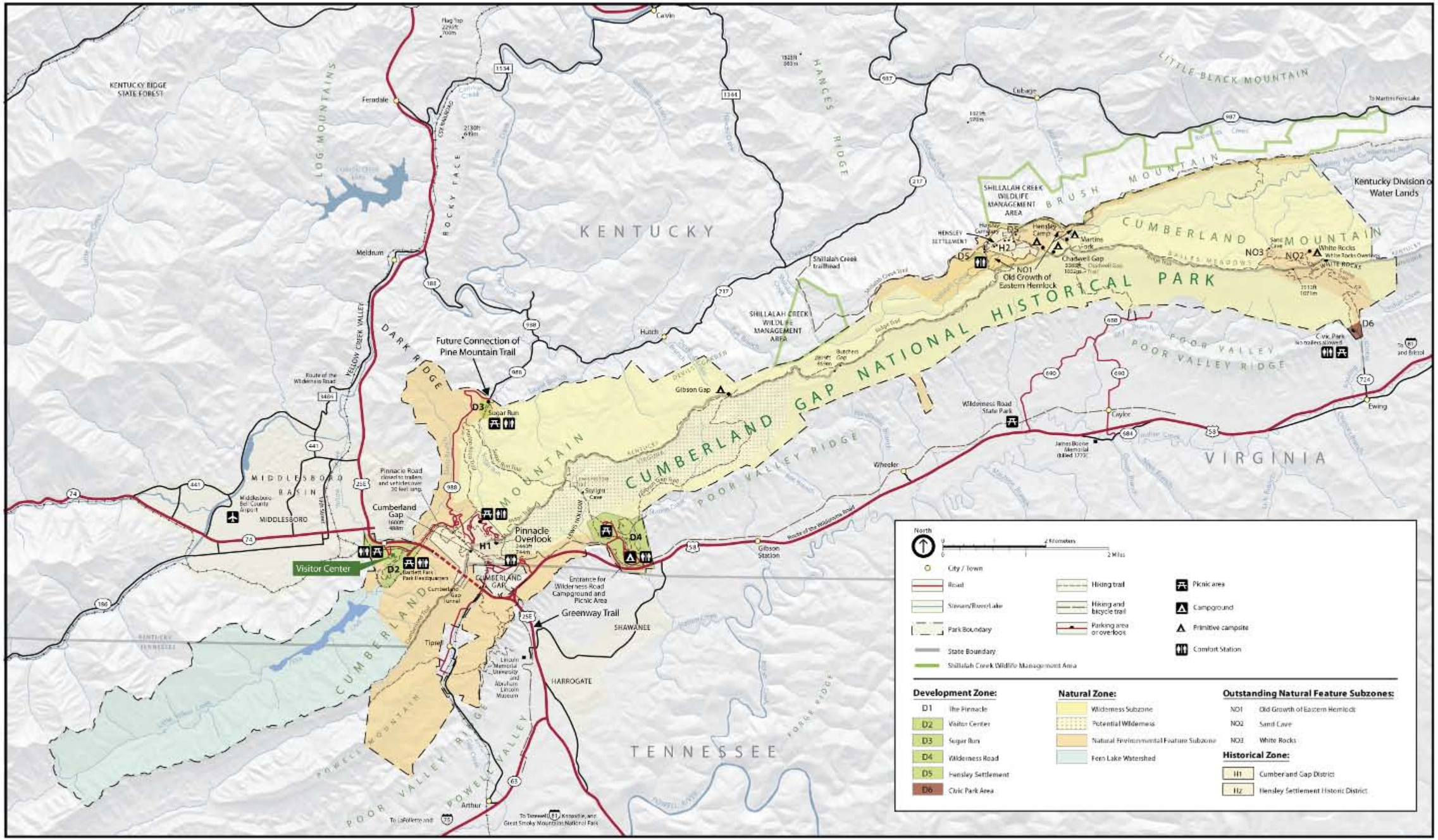
Generally, these criteria mean the environmentally preferred alternative is the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources (NPS 2006b). Alternative C was identified as the environmentally preferred alternative, as it satisfies more of the criteria than the other alternatives. Alternative C is the environmentally preferred and the agency preferred alternative.

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM DETAILED EVALUATION

An alternatives workshop was held in April, 2005 to develop viable alternatives for the General Management Plan. A number of actions that were considered but dismissed are listed below:

- Mountain biking in off-road areas was considered (road biking is currently appropriate in designated paved areas, but not off-road unpaved areas). In accordance with 36 Code of Federal Regulations 4.30, bicycle use is allowed on park roads, in parking areas, and on routes designated for bicycle use. The designation of bicycle routes is allowed in developed areas and in special use zones based on a written determination that such use is (1) consistent with the protection of a park's natural, cultural, scenic, and esthetic values; (2) consistent with safety considerations; (3) consistent with management objectives; and (4) would not disturb wildlife or other park resources. A similar determination may be made to designate routes outside developed areas and special use zones; however, the designation must be made by promulgating a special regulation.
- A remote parking facility located approximately halfway up Brush Mountain on the road to the Hensley Settlement was considered. This action was dismissed due to the adverse environmental effects of constructing a parking facility on steeply sloped terrain, as well as the high cost of building this facility.

- Elimination of the small Developed Zone on the south side of Shillalah Creek Road on the west side of the Hensley Settlement was considered. However, this area is a practical location for comfort stations, a parking lot, and, if needed, future shelters for other facilities. Therefore, this feature was retained.
- Horseback riding at Civic Park was considered. This was determined to be an inappropriate use due to the potential for adverse effects from soil erosion on the steep trail at this location and was dismissed from further consideration.



Alternative A – No Action

Cumberland Gap National Historical Park
U.S. Department of the Interior - National Park Service

Figure 6

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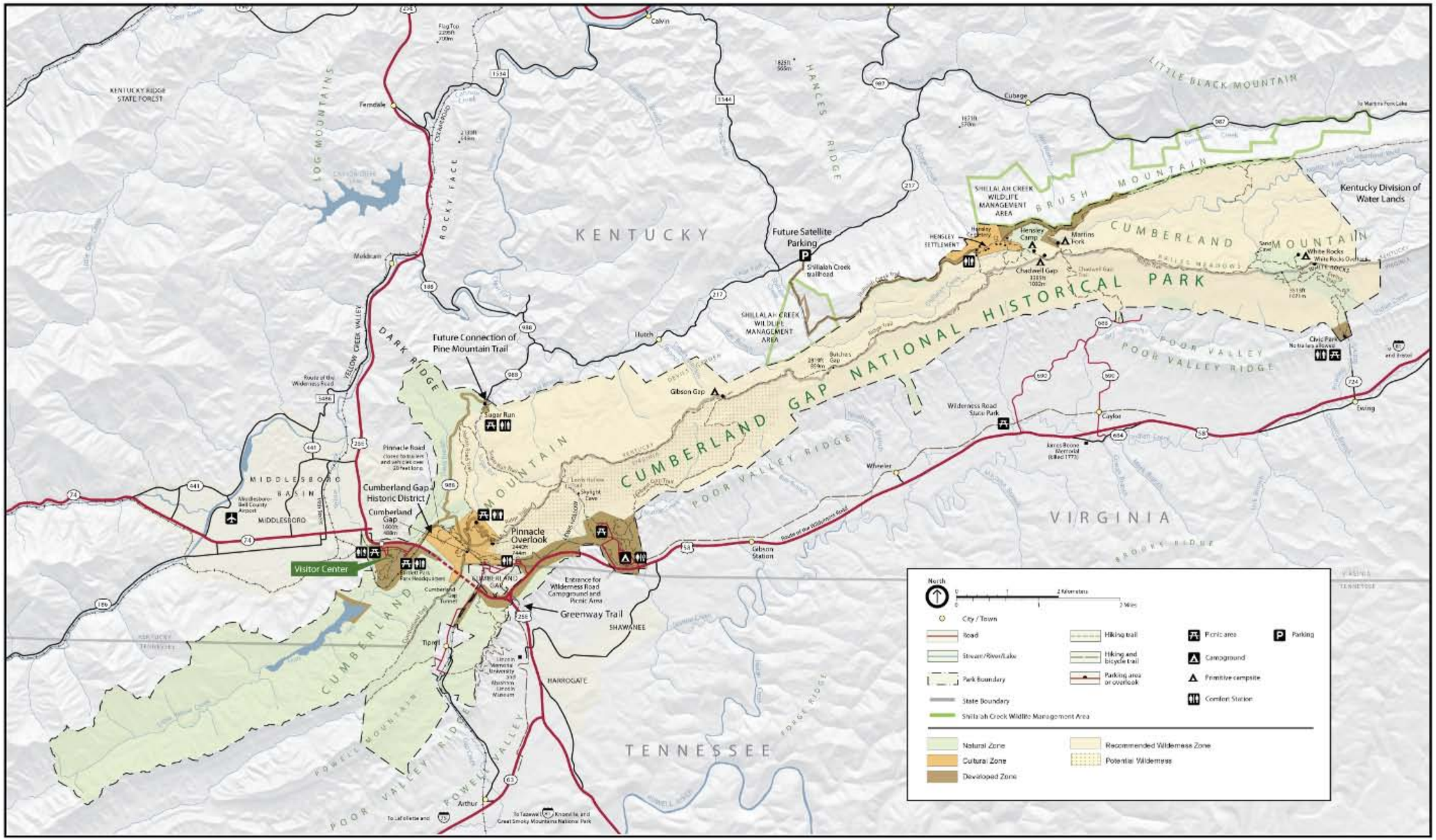

Alternative B

Cumberland Gap National Historical Park
U.S. Department of the Interior - National Park Service

Figure 7

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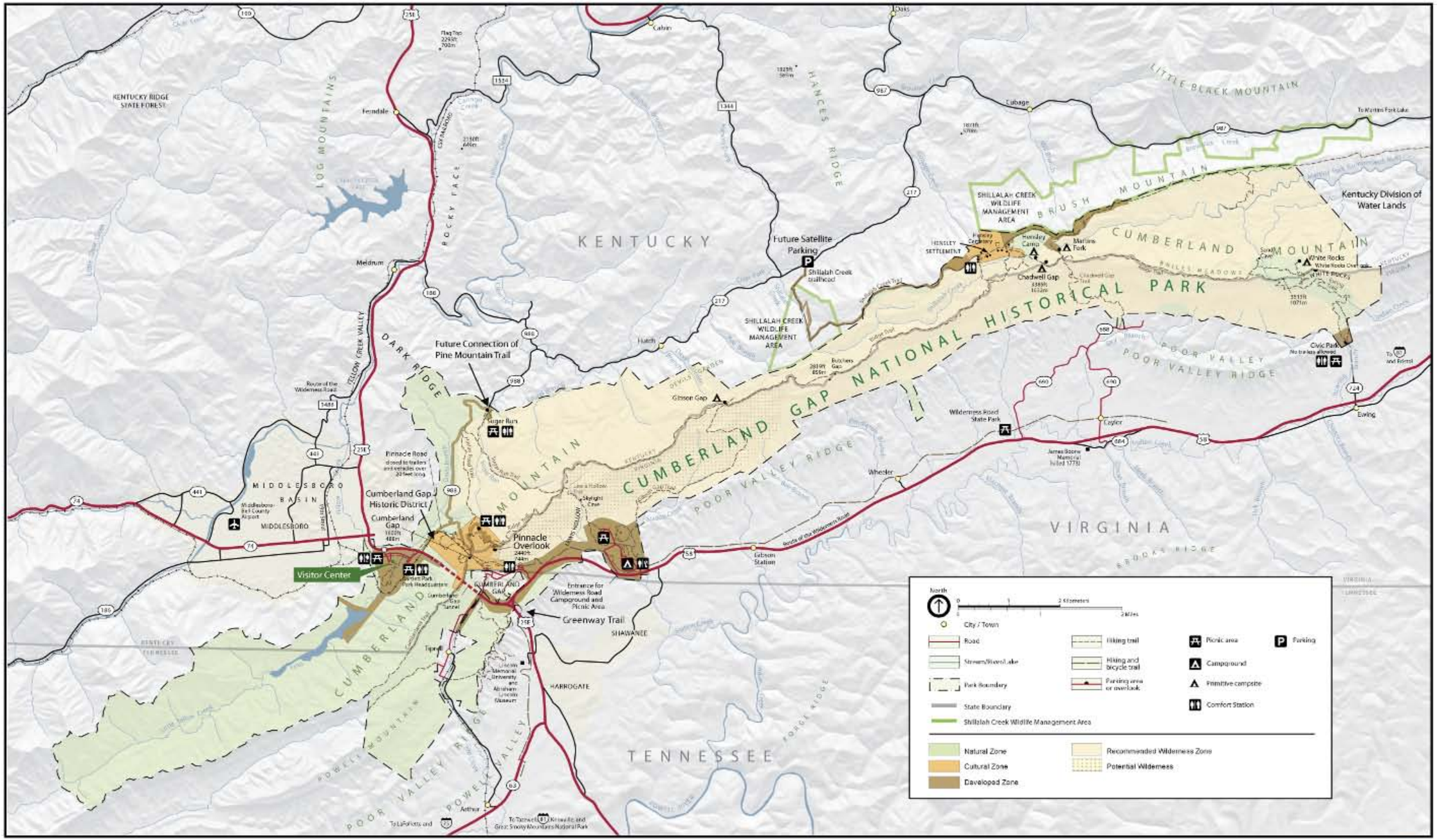

Alternative C – Preferred Alternative

Cumberland Gap National Historical Park
U.S. Department of the Interior - National Park Service

Figure 8

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Chapter 3
AFFECTED ENVIRONMENT

The Hensley Settlement

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CHAPTER 3
AFFECTED ENVIRONMENT

This section describes characteristics of the existing environment that could be affected by the proposed action alternatives and the No Action Alternative (continue current management). The description of the affected environment focuses on the impact topics retained for further analysis as described in Table 3 of Chapter 1. These include: cliffs, caves and karst, soils, water quality, fisheries / aquatic resources, wetlands, vegetation – native plant communities, species of special concern, historic and cultural resources, and design of the built environment, ethnographic resources/sacred sites, socioeconomics, visitor use and experience and viewshed, transportation, soundscape, park operations, and concessions and commercial services, The affected environment establishes the baseline for analysis of impact in Chapter 4, "Environmental Consequences." Impact topics described in this chapter are listed in Table 3 of Chapter 1, "Purpose and Need for a General Management Plan."

NATURAL RESOURCES

This section describes the characteristics of natural resources in the park according to the impact topics that were retained based on the criteria defined in Chapter 1. These include: cliffs, caves and karst, soils, water quality, fisheries / aquatic resources, wetlands, vegetation – native plant communities, and species of special concern.

Geology – Cliffs, Caves, and Karst

Cliffs

Numerous large sheer cliffs occur in the park that provide spectacular scenic vistas, including, for example, the Pinnacle, located near Cumberland Gap, and the White Rocks, located on the southern side of Cumberland Mountain at the northeastern end of the park near Ewing, Virginia. The Pinnacle is the number one visitor attraction in the park, and is near Cumberland Gap. The White Rocks rise almost vertically from Poor Valley to an elevation of 3,513 feet and were an important landmark for pioneers heading to Cumberland Gap. The White Rocks were formed from resistant sandstone capped with conglomerate that contains hematite, the mineral form of iron oxide.

Caves

Twenty four caves in the park developed on Cumberland Mountain. The overlying mountains are part of a large over thrust block made of shale, limestone, sandstone, conglomerate, and layers of coal (NPS 1998a). Caves form over long periods of time by dissolution of the limestone layers by rainwater that contains carbonic acid. These natural caves, ranging from 60 feet to approximately 5 miles long, are located along the south face of Cumberland Mountain, within the Greenbrier limestone formation (NPS 1998a). The importance of one cave, once referred to as Cudjo Cavern and identified as Gap Cave in this general management plan, was recognized in the park's 1940 establishing legislation (54 STAT 262). More recent legislation, such as the Federal Cave Resource Protection Act of 1988, defined caves as an important national resource that must be protected and preserved for the perpetual use, enjoyment, and benefit of all humankind. The NPS *Management Policies 2006* further affirm the significance of cave resources. Significance of the caves in the park is related to an unusually large variety of cave formations and because the largest cave (Gap Cave) harbors the federally endangered Indiana bat. Evidence for historic occupation of Gap Cave by the federally endangered gray bat has also been shown (NPS 1998a). Finally, the caves of the park are likely to be an important cultural resource (NPS 1998a). Following is a summary of the main features of caves in the park (excerpted from OSM (1996) and NPS (1998a).

Eleven of the caves are located within an approximately 1,900-acre tract that was originally owned by Lincoln Memorial University between 1920 and 1947. In 1947, ownership of the tract was transferred to the Commonwealth of Virginia. However, the university retained water rights to the underground stream (Gap Creek) that supplies water to Lincoln Memorial University and the communities of

Cumberland Gap and Harrogate. Between 1947 and 1992, the University retained rights to conduct commercial tours in the caves, and a series of concessioners were contracted for this purpose. Infrastructure was installed in the caves to support this business enterprise. This included improvements around the cave entrances, the addition of lighting, walkways, doors, a store, a water reservoir, and a small parking area. These 11 caves were acquired by the NPS in 1992. The NPS currently owns and manages the entire system of caves on Cumberland Mountain, including Gap Cave.

Of the 11 caves, two primary caves have been historically open to the public: King Solomon's Cave and Soldier's Cave. These were connected by a tunnel in 1934. The combined cave was then named Gap Cave, which was then changed to Cudjo Cavern after a fictional character in a regional novel. The name Gap Cave has been retained for purposes of this general management plan.

The majority of the infrastructure constructed in Gap Cave by Lincoln Memorial University was removed or greatly modified by the NPS as part of a restoration project. Today, to augment the cave experience, visitors experience ranger-led guided tours using flashlights to view cave features. A system of stairways and handrails was also installed.

Radon monitoring, for caves that receive visitors, began in 1977 (NPS No Date). During the summer months, high readings of radon were found at Indian Cave. Indian Cave was gated in 2001 for reasons other than radon levels. Gap Cave (formerly Cudjo Caverns) has four radon monitoring sites that are monitored year round. Based on guidance set forth in Occupational Safety and Health Administration regulations regarding occupational radon exposure (29 Code of Federal Regulations 1910.1096), radon levels in the cave are far below levels that would be hazardous to park staff that frequently visit the cave (NPS 2006d). Visitors are in the cave for such a limited time that their exposure is nearly incalculable.

Gap Cave is part of a larger cave system that extends approximately 5 miles in total distance. However, parts of the system are still unexplored. Gap Cave is nationally known for its wide variety of geological formations. These include a massive 60-foot high stalagmite, corrugated rim basins, concretions, fern-like crystal growths, bacon strip and curtain draperies, terraced stalagmites, helicites (curved or angular twig-like projections of calcium carbonate), and delicate straw-shaped stalactites (NPS 1998a). Some of the cave's dome pits are up to 125 feet deep.

Few ecological studies have been conducted in Gap Cave. Both ecological and geological resources in caves are known to be delicate and easily impacted dramatically by human use. Further inventories are needed to better understand and protect Gap Cave resources.

The upstream section of Gap Cave is a critical hibernating area for the federally endangered Indiana Bat (*Myotis sodalis*). There is also evidence that federally endangered gray bats (*Myotis grisescens*) may have historically used Gap Cave as a summer habitat (NPS 1998a).

Caves in the park provide an important habitat for a wide variety of bats, as well as wood rats, beetles, phoebes, foxes, and bobcats. A variety of mosses and lichens also grow near the cave entrances.

The first known use of Gap Cave by humans was approximately 9,000 years ago. During the Civil War, cave dirt containing saltpeter was mined in the greater Gap Cave System.

Many of the caves in the park are located in Cumberland Mountain but do not extend into the interior of the mountain through extensive recognizable passageways. These caves are shallow erosional features located along the south side of Cumberland Mountain. The best known example is Sand Cave, located 0.75 miles west of the White Rocks at the east end of the park. Sand Cave is 240 feet long and 84 feet wide and is located beneath an erosion- resistant sandstone ledge. No passages extend into the mountain. The floor of the cave is approximately 1.25 acres in extent and is covered with deep deposits of colorful sand formed by water percolating through the rocks above. Water originates from rainfall and a wetland located directly above the cave (NPS 1978a).

Karst

Karst features include several limestone sinks located along Cumberland Mountain. The best known example of a karst sinkhole is Goose Nest, located approximately 7 miles east of the Pinnacle. Several open vertical karst pits, up to 100 feet in depth and 3 feet in diameter, can also be found in the park.

Soils

Cumberland Gap National Historical Park encompasses approximately 24,531 acres of land and contains over 60 individual types of soils. Seven soil types represent over 75 percent of the total area and are discussed below. Appendix C includes a list of all soil types that occur within the park, including the number of acres of each soil type and the percentage of the total park acreage. Appendix C also includes descriptions, general use, vegetation, and locations for each soil found within the Fern Lake Watershed.

Many of the soils in the park have limitations for building and development due to slope, erosion potential, and shallow bedrock. Soil erosion associated with construction, therefore, has a potential to affect water quality in adjacent streams.

In addition to the above information, descriptions of soils in the Fern Lake watershed are also presented in the environmental impact statement prepared in conjunction with a petition with the U.S. Office of Surface Mining to designate certain lands in the Little Yellow Creek watershed as unsuitable for all surface coal mining operations under the federal program for Tennessee (30 Code of Federal Regulations 942.700) (OSM 1996). Appendix C also includes a summary of this information, excerpted from the original environmental impact statement.

Water Quality

Water quality in the park is protected and managed under the Federal Water Pollution Control Act Amendments of 1972 and the Clean Water Act of 1977. *NPS Management Policies 2006* also require the protection and conservation of water quality in the park. Water quality is primarily the net result of overall watershed characteristics and the effects of point-source and nonpoint-source discharges of pollutants. This section includes a summary of the characteristics of watersheds in the park and a summary of existing water quality in streams, lakes, and ponds located within the park, including Fern Lake.

Watershed Characteristics

The park is located within the Powell and Upper Cumberland (U.S. Geological Survey Cataloging Unit: 05130101) watersheds, which encompass Bell, Campbell, Claiborne, Hancock, Harlan, Norton, Scott, Wise, Letcher, Union, and Lee Counties (USEPA 2007). Drainages located within Bell County are the Upper Cumberland and Powell. Watersheds located within Claiborne County include Upper Cumberland, Upper Clinch, and Powell. Watersheds located in Harlan County include Middle Fork, Upper Cumberland, and Powell. Watersheds located in Lee County include Upper Cumberland, Upper Clinch, and Powell.

Hydrology in the park is an interactive process between surface water flow and groundwater flow. During dry weather, small first and second order streams commonly dry up, and flows in major streams and rivers may be attributed to base flow contribution from groundwater (OSM 1996). The majority of streams in the park are smaller first and second order streams. Surface water drains into either the Cumberland River or Powell River drainage basins, while the groundwater is a part of the Non-glaciated Central Region (OSM 1996).

Streams generally flow in opposite directions from the top of the Brush Mountain and Cumberland Mountain ridges (Nicholson 1978). Hillsides are characterized by steep hollows drained by relatively small streams that are seasonally flooded. Four permanent streams drain the northwest slope of the park. In the western end of the park, Little Yellow Creek receives flow from Fern Lake and ultimately

connects to Yellow Creek in Middlesboro. Sugar Run and Davis Branch flow into Yellow Creek and then into the Cumberland River.

Shillalah Creek and Martins Fork are the primary streams in the eastern end of the park and drain into the Cumberland River. The southeastern side of Cumberland Mountain is drained by Station Creek near the Wilderness Road Campground. Several smaller intermittent streams also drain the southeastern face of Cumberland Mountain. Lower volumes of surface water drain off the southeast face of Cumberland Mountain because it is steeper then the northern side of the mountain.

Fern Lake is a 150-acre public water supply for Middlesboro, Kentucky, located southwest of the park visitor center. The City of Middlesboro withdraws about 1.5 million gallons of water per day from Fern Lake or about 547.5 million gallons per year (1,668-acre feet per year).

Based on an examination of the National Wetland Inventory maps (USFWS 2007b), several small man-made ponds also exist within the park boundaries (Appendix E). The majority of these ponds occur in relatively undisturbed areas of the Fern Lake watershed at the southwestern end of the park. These ponds have been created by either dikes or excavations. No information on water quality of these small ponds is available, but since they are located in a relatively undisturbed watershed, it is likely that water quality is relatively good.

Karst geology of the park creates large amounts of groundwater that originate on top of Cumberland Mountain from rain events. Rainwater percolating downward enters a vast karst system of caves and crevices. Water emerges at various locations along the base of the mountain where it enters surface streams. Gap Cave is a good example of how this works. Water leaving Gap Cave has excellent water quality and is used as a source of drinking water. The water is tapped, treated, bottled, and sold by the Cumberland Gap Spring Water & Middlesboro Coca-Cola Bottling Company, Inc.

Water quality in streams and lakes is affected by land uses within the watershed, geology of the area, soil erosion, vegetation, and soil nutrients. Because the majority of the park is relatively undisturbed and elevated directly above the surrounding areas, surface water originating within the park provides an abundance of clean water to the region. Water quality of streams and Fern Lake is described in the sections that follow.

The following evaluation of the condition of the streams, ponds, and lakes in the park is based upon the ability of each water body to support designated uses for fishing, aquatic life, swimming, drinking water, etc., in compliance with the state and federal regulations in each of the three states. Most water bodies at the Cumberland Gap National Historical Park are classified as fishable and swimmable. Primary sources of information for this assessment were the 2002-2004 Water Quality Reports to Congress (state water quality reports to Congress as required under section 305(b) of the Clean Water Act) (TDEC 2002; 2004) from the states within Cumberland Gap National Historical Park (Virginia Department of Environmental Quality, Tennessee Department of Environment and Conservation, Kentucky Division of Water).

The 303(d) list (TDEC 2004a) was also referenced to describe existing water quality in the park. The 303(d) list is a compilation of the streams and lakes that are water quality limited or are expected to exceed water quality standards in the next two years and need additional pollution controls. Water quality limited streams are those that have one or more properties that violate water quality standards. They are considered impaired by pollution and not fully meeting designated uses. However, because the majority of the water bodies in the park are located in natural or wilderness areas, most of the streams in the park are characterized by good water quality (Table 11).

Table 11. Water Quality in the Principal Streams and Lakes in Cumberland Gap National Historical Park Based on U.S. Environmental Protection Agency Assessments[1]

Name	Watershed/State	Stream Order Inside Park[2]	Condition	Setting	Land Use
Fern Lake	Upper Cumberland/ TN and KY	N/A	Good	Natural	Wooded/Natural
Indian Creek	Powell/VA	1	Good	Natural	Wooded/Natural
Devils Garden Branch	Upper Cumberland/ KY	1	Good	Natural	Wooded/Natural
Lewis Hollow Branch	Powell/VA	1	Good	Natural	Wooded/Natural
Davis Branch	Upper Cumberland/ KY	1 and 2	Good	Natural	Urban in lower section, wooded/natural in upper section
Sugar Run	Upper Cumberland/ KY	1 and 2	Good	Natural	Wooded/Natural
Martins Fork Branch	Upper Cumberland/ KY	1, 2 and 3	Good	Natural	Wooded/Natural
Station Creek	Powell/VA	1 and 2	Good	Natural	Wooded/Natural
Shillalah Creek	Upper Cumberland/ KY	1 and 2	Good	Natural	Wooded/Natural
Gap Creek	Powell/TN and VA	1 and 2	Good	Mix of Natural and Urban	Small part of upper Gap Creek is located in wooded/natural setting; the rest is located in relatively urban setting. Stream adjoins Town of Cumberland Gap.
Little Yellow Creek	Upper Cumberland/ KY	1, 2 and 3	Some contamination	Mix of Natural and Urban	Mix of Urban and Wooded
Upper Little Yellow Creek (Above Fern Lake)[3]	Upper Cumberland/ TN	1, 2 and 3	Generally good[3]	Natural	Wooded/Natural

[1] Stream Order refers to the relative size of streams. Stream orders range from smallest (1) in the uppermost portion of a watershed to the largest (12) in the lowermost part of the watershed.
[2] Source: TDEC (2004)
[3] Note: Upper Yellow Creek was not included in the USEPA (2007) assessment. Information on water quality obtained from OSM (1996).

Fern Lake

The general water quality of Fern Lake is good from both a chemical and sediment load basis (OSM 1996). However, water quality of Little Yellow Creek below Fern Lake has been affected by sedimentation and runoff. In the environmental impact statement prepared in conjunction with the determination of the watershed as unsuitable for coal mining (OSM 1996), the sediment load characteristics of Little Yellow Creek below Fern Lake were assessed and compared to another local watershed that had been mined. Following is a summary of the results of these investigations (excerpted from OSM 1996):

- For small rainstorms, most sediment is from roads adjacent to Little Yellow Creek. Most sediment is produced on the lower stream segments. Tributaries contain little sediment since few roads or other disturbances are present. Most of the surface flow is from forest litter or materials that move through well vegetated areas downslope by force of gravity or erosion and collect at the base of mountains or foothills, with little or no sorting (colluvial deposits).
- Tributaries on the north side of Little Yellow Creek and Fern Lake had different water quality characteristics than the south side tributaries, as follows:
- Low conductivity values observed on the south side of the watershed are due to differences in geology. Here, the strata is composed primarily of porous sandstone, which allows for much greater groundwater movement through the shallow fracture system and greater leaching of the exposed rock surfaces over time. Groundwater and surface runoff from the area more closely resemble the chemistry of rainwater. Streams on the south side of the lake are acidic with low pH, low alkalinity, and little sulfate.
- In contrast, the tributary streams on the north side of the Fern Lake basin are higher in pH, have moderate alkalinity, hardness, and elevated conductivity. This is due to several factors: (1) the north side of the watershed has a different geologic formation with numerous clay and coal zones, (2) strata have been fractured by stress relief forces, (3) sandstones have lower hydraulic conductivity on the north side, and (4) historic mining and road disturbances are common on the north side of the Fern Lake watershed.
- Groundwater in the Fern Lake basin plays an important part in maintaining the hydrologic balance of the watershed. The many conceptual groundwater models developed in the 1980s and ‘90s appear to concur that mining has had a direct effect on the groundwater regime.
- The water in Fern Lake mirrors the water quality of the tributaries. In fact, many of the tributaries to Fern Lake are derived from springs. The steep gradients allow for a high volume of groundwater flow. This explains why even during heavy rains surface runoff may not be evident and defined stream channels are not as prevalent on the hillsides. Runoff quickly infiltrates into the ground litter and recharges the coarse rocks below or travels as interflow at the intersection of material. This water is able to move quickly to steep drainage draws with colluvial deposits that minimize the surface gullying found in other types of watersheds.
- In areas characterized by alluvial deposits (rock debris that has been eroded into fine sediments and transported by a stream or river to the valley floor), water quality is more affected by biological and geochemical environment than most colluvial deposits. This is because alluvial deposits are usually fine-grained, allowing a larger surface area of the material in contact with the water. The hydraulic gradients are usually much lower allowing more residence time of the groundwater. Two large bodies of alluvial deposits have been mapped within the Fern Lake watershed. The largest mapped deposits are associated with the mouth of Little Yellow Creek at Fern Lake. Part of these deposits makes up a wetland located on the extreme upper portion of Fern Lake.

- Some low-yielding natural springs and seeps can be seen issuing from colluvial and alluvial deposits along Little Yellow Creek. Several of these springs leave an orange colored deposit on the rocks beneath, but the amount of flow is very small (<1 gpm). Sometimes these strained springs are mistaken to be acid mine drainage springs and seeps. Many of these red colored springs, however, come from natural sources of organic matter, bacteria, and algae in the soil.

Fisheries/Aquatic Resources

Aquatic resources in the park, which include fish and annelid worms, mollusks, flatworms, roundworms, and crustaceans (macroinvertebrates), are described in this section. These organisms are excellent indicators of the ecological condition and long-term water quality of streams, rivers, and lakes. Because of the potential for environmental effects on aquatic resources as a result of implementation of the alternatives, a summary of the results of past studies in the area is provided in Appendix F. These studies have included the following:

- One of the first studies of fish in the park was conducted by Barbour, et al. (1979). This included sampling conducted at 12 stations throughout the park.
- The park has also sponsored studies of macroinvertebrates (Copeland, et al. 1992; Skelton and Eisenhour 1993; Skelton and Fraley 1995; NPS 2001d) in conjunction with the U.S. Hwy 25 Tunnel project. The NPS also assessed the condition of the blackside dace in Davis Branch (Stephens 1990-1996, 2006/2007). The blackside dace was initially identified in Little Yellow Creek by McCoy and McCoy Environmental Consultants (1993) as part of baseline environmental information provided in an application by Appolo Fuels, Inc., to conduct surface mining in the Little Yellow Creek watershed.
- In conjunction with the environmental impact statement on the Fern Lake unsuitable for mining petition (OSM 1996), the Tennessee Department of Environment and Conservation (TDEC 1995) conducted a quantitative assessment of fish community structure, a qualitative assessment of benthic macroinvertebrate communities, and an aquatic and riparian habitat assessment at four sampling locations on Little Yellow Creek upstream of Fern Lake.
- An investigation of the aquatic resources and water quality of the Yellow Creek watershed was conducted by the Kentucky Department of Environmental Protection, Division of Water in 1988 and 1990 (KDEP 1990) as part of an ongoing assessment of water quality in the Yellow Creek watershed to assess the extent of water quality improvement associated with upgrading of the Middlesboro Wastewater Treatment Plant in 1986.
- The Kentucky Division of Water Quality (KYDOWQ 1978) and Harker, et al (1980), conducted investigations in the Yellow Creek watershed associated with impacts of coal mine runoff and municipal wastewater effluents in the Yellow Creek watershed.
- An additional inventory of fish species in the park was conducted in 2004 by Albert W. Remley of Third Rock Consultants. Four warm-water and two cold-water reaches were sampled for a total of 1,410 meters of stream length. 1,946 individuals representing 22 species were observed during this project.

Appendix F contains detailed summaries of the results of these investigations. The overall conclusion of these studies was that the fish and benthic populations in the majority of streams in the park are in relatively healthy condition. Benthic populations in Little Yellow Creek, Yellow Creek, and Gap Creek have been affected by construction of the U.S. 25E tunnel project, but recovery is in progress and is expected to continue.

Construction of the U.S. 25E tunnel and elimination of U.S. 25E, resulted in short-term adverse effects on fish and benthic populations in the immediate vicinity of the construction, but recovery has been demonstrated and is expected to continue.

The most recent fish inventory found very few fish in the two cold-water streams in the park. These two streams previously supported a viable introduced brook trout population. Water quality data show a decline in the pH of the water, which may contribute to this decline in the fish population. Further studies will be conducted on these streams in the near future.

Wetlands

This section provides a summary of the numbers, types, acreages, and functions and values of wetlands in the park. Information to complete this assessment was identified from Geographic Information System layers available through the National Wetland Inventory and the NPS (USFWS 2007b; NPS 2006b) and from other available information.

The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency formally define wetlands as, "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas," (USACE 1987). Lakes and ponds are also classified as wetlands by the U.S. Fish and Wildlife Service (Cowardin, et al. 1979).

Wetlands perform many ecological functions that have associated value to humanity, including (USFWS 2007a):

- Surface water storage (flood control);
- Shoreline stabilization (wave damage protection/shoreline erosion control);
- Stream flow maintenance (maintaining aquatic habitat and aesthetic appreciation opportunities);
- Groundwater recharge (some types replenish water supplies);
- Sediment removal and nutrient cycling (water quality protection);
- Support of aquatic productivity (fishing, shell fishing, and waterfowl hunting), production of trees (timber harvest);
- Production of herbaceous growth (livestock grazing and haying);
- Production of peaty soils (peat harvest); and
- Provision of plant and wildlife habitat (hunting, trapping, plant/wildlife/nature photography, nature observation, and aesthetics).

Wetlands are defined according to the types of vegetation, soils, and hydrology on a given site (Cowardin, et al. 1979). Appendix E provides the types of wetlands in the park and detailed definitions of each wetland type. Table 11 provides a description of each type of wetland that occurs in the park based on the classification system provided in the U.S. Fish and Wildlife Service National Wetland Inventory (USFWS 2007a). Appendix E provides detailed definitions of each of the wetland types.

The two broad categories of wetlands in the park are the lacustrine (lakes and ponds) system and the palustrine system (emergent, forested, and scrub-shrub) (Table 11). Each system is further subdivided into classes and subclasses based on the type of vegetation, whether the vegetation is persistent or not, and other features (Appendix E). Finally, hydrologic and other "modifiers" such as flooding regime or degree of modification by man (diked, impounded, or excavated) are also used to further define wetland types (Appendix E). Table 12 summarizes the number of acres of each wetland type estimated to occur in the park based on a detailed map of the wetlands; this map is provided by the park.

Table 12. Number of Acres of Each Wetland Type Present in Cumberland Gap National Historical Park[1]

National Wetland Inventory Wetland Type	Total Number of Acres in Park
Emergent	
PEM1A	0.5
PEM1C	0.1
Subtotal Emergent:	**0.6**
Forested	
PFO1A	22.7
PFO1Ah	21.2
PFO1C	18.3
PFO1Eh	1.2
PFO4A	19.5
PFO1/4A	25.9
PFO4/SS1A	3.1
Subtotal Forested:	**111.9**
Scrub-Shrub	
PSS1/EM1C	1.8
PSS1/FO4A	13.0
PSS1/FO4C	1.9
PSS3/FO4A	4.8
Subtotal Scrub-Shrub:	**21.5**
Lakes and Ponds	
L1UBHh	108.7
PUBFh	0.5
PUBHh	0.4
PUBHx	1.2
Subtotal Lakes and Ponds:	**110.8**
Estimated Total Acres of Wetlands:	**244.8**

[1] Acreages and types of wetlands based on U.S. Fish and Wildlife Service National Wetland Inventory maps (USFWS 2007b).

Emergent, Forested, and Scrub-Shrub Wetlands

A total of approximately 0.6 acres of emergent wetlands occur at two locations in the southwestern area of the park. A seasonally flooded emergent wetland is located near the park border southeast of the City of Harrogate. A temporarily flooded emergent wetland is located near Sugar Run along the northern border of the park. Emergent wetlands are typically dominated by sedges and rushes. These are relatively small wetlands but they are typically highly productive and provide valuable habitat for wildlife and amphibians. Emergent wetlands are also typically important in recharging groundwater.

A total of approximately 111.9 acres of forested wetlands occur in the park, comprising six different types of forested wetlands (Table 12). Forested wetlands are associated with the floodplain of Fern Lake and along stream drainages in the vicinity of the park maintenance building area, visitor center, and stream drainages in other parts of the park. The majority of these wetlands are dominated by broad leaved deciduous trees, or a combination of broad leaved deciduous trees with either scrub-shrub vegetation or needle-leaved evergreen trees. The hydrology of these forested wetlands ranges from temporarily flooded to seasonally flooded/saturated habitats. Two of the forested wetland types

have been mapped as being either diked or impounded. Primary functions and associated values of forested wetlands include high rates of primary production, shoreline stabilization, flood control, groundwater recharge, and provision of valuable wildlife habitat.

A total of approximately 21.5 acres of scrub-shrub wetlands occur in the park, consisting of four different types. All these are combinations with either emergent or forested types (with scrub-shrub being the dominant type). Scrub-shrub wetlands are associated with stream drainages near the campground, in the vicinity of Sugar Run, and along Shillalah Creek. The majority of these wetlands are dominated by woody vegetation less than 6 feet in height, or a combination of this with broad leaved deciduous trees or needle-leaved evergreen trees. The hydrology of scrub-shrub wetlands in the park ranges from temporarily flooded to seasonally flooded habitats. Primary functions and associated values of scrub-shrub wetlands are similar to forested wetlands.

Bogs

Several bogs have been identified within the park. These are shown on a map provided by the park service depicting the park. The National Wetland Inventory does not show these wetlands, perhaps due to their small size.

The term "bog" is not fully applicable to these types of wetlands but has been used in the past as a general term to describe "hydric inclusions and mountain wetlands within the southern Appalachian region" (Sandefur 2002). Sandefur (2002) stated that the bogs in the park are actually defined as "open fens" because they are characterized primarily by groundwater inflows from surrounding mineral soils. These bogs have developed on the tops of mountains in poorly drained areas in headwater streams. For purposes of this general management plan, the more general term "bog" is used to describe these systems, since it is more commonly used and recognized in the region.

Three bogs that occur within the park have been studied by Sandefur (2002). These bogs cover approximately two acres and represent the largest are of mountain bogs in the State of Kentucky. Vegetation in these wetlands is dominated by cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*), Sphagnum moss (*Sphagnum* spp.), goldenrod (*Solidago* spp.), and various species of sedges, rushes, and grasses. Bogs are relatively rare habitats that have many unique biological features, and they also harbor several species of rare plants.

Fern Lake

The National Wetland Inventory maps (USFWS 2007b) define Fern Lake as a lacustrine system created by an impoundment. Fern Lake occupies approximately 150 acres in the southwest end of the park. The lake is located in a heavily wooded, relatively undisturbed watershed associated with Little Yellow Creek that ultimately drains into Yellow Creek.

Water quality of the lake is described in the "Water Resources" section of the plan. No studies have been conducted on the aquatic ecology of Fern Lake since the surrounding 4,500 acre watershed has been protected for the last 20 years and water quality is good. It is expected that the lake supports healthy populations of fish, benthic invertebrates, and plankton.

Ponds

Eight small ponds of three different National Wetland Inventory classifications, totaling 2.1 acres, occur in the southwest end of the park, within the Fern Lake watershed. Ponds range from semi-permanently flooded to permanently flooded habitats and have been formed either from impoundments or excavations. These wetlands occur in relatively undisturbed areas and, therefore, are expected to provide a good habitat for aquatic organisms and wildlife.

Vegetation –Native Plant Communities

The majority of the park consists of naturally vegetated habitat. In fact, 14,091 acres of the park is designated as Recommended Wilderness area and is relatively undisturbed. The University of Georgia

Center for Remote Sensing and Mapping Science (UGA 2007) mapped the terrestrial vegetation in the park. Information resulting from this study is provided in Appendix G. A total of nine major categories of vegetation were identified:

- Montane Cold – Deciduous Forests
- Submontane Cold - Deciduous Forests
- Needle – Leaf Evergreen Forests
- Mixed Evergreen - Deciduous Forests
- Successional Forests
- Temporarily Flooded Cold Deciduous
- Shrublands
- Herbaceous
- Wetlands and Bogs

The University of Georgia map shows the location of each vegetation type within the park and can be used as the basis for conducting site-specific impact assessments of future construction projects. These would be conducted as part of environmental assessments that would be tiered to the general management plan/environmental impact statement.

Invasive plants are a problem in the park (Butler, et al. 1981). Even if the park eradicated all invasive plants, they would still continue to invade from the surrounding areas and pose a management issue. For instance, privet (*Ligustrum sinense*), autumn olive (*Elaeagnus umbellate*), Kudzu (*Pueraria Montana*), and honeysuckle (*Lonicera spp.*) could have a major effect on the park if not managed properly. The Princess tree (*Paulownia tomentosa*), tree of heaven (*Ailanthus altissima*), crown vetch (*Coronilla varia*), and colts foot (*Tussilago farfara*) are also problem species in the park. The park is already required to control exotic species via its existing resource management plan, however. Invasive plants will, therefore, not be addressed further in the general management plan/environmental impact statement.

SPECIES OF SPECIAL CONCERN

Species of special concern include those listed by the U.S. Fish and Wildlife Service, the three state resource agencies in which the park is located, or the Natural Heritage programs in each state. Appendix H provides detailed lists of species of special concern known to occur, or to potentially occur, in the park based on an analysis of available information from the U.S. Fish and Wildlife Service (USFWS 2007c) the Kentucky Department of Fish and Wildlife (KDFW 2007), Tennessee Department of Environment and Conservation (TDEC 2007b) the Virginia Department of Inland Game and Fisheries (VDIFG 2007), and the Natural Heritage Program (NatureServe 2007). The lists in Appendix H were prepared by comparing lists of rare, threatened, and endangered species of plants and animals that have been actually observed in the park (Barbour, et al. 1979; Pounds, et al. 1989; Copeland, et al. 1984, 1992; Burger 1958) with published information on special status species in the counties in which the park occurs. Appendix H represents only known species that have been reported in the park.

The Endangered Species Act of 1973 requires an evaluation of the potential effects of proposed actions on all federally-listed endangered and threatened species. The U.S. Fish and Wildlife Service determines if a species needs protection under the Endangered Species Act and whether to classify a species as endangered, threatened, proposed for listing, or as a candidate species. Endangered species are considered to be in danger of extinction throughout, or in a significant portion, of their range; threatened species are those likely to become endangered in the foreseeable future; species proposed for listing are in the process of being listed; and candidate species are determined to warrant

protection and are being considered for listing as an endangered or threatened species. Candidate species do not have legal protection.

NPS policy also requires examination of impacts on state-listed threatened, endangered, candidate, rare, declining, and sensitive species (NPS 2006a). Species listed as endangered or threatened by the states are defined in the same way as federally listed species.

The U.S. Fish and Wildlife Service has jurisdiction over species listed under the Endangered Species Act. A total of four federally-listed species occur in the park. These include the Indiana bat (*Myotis sodalis*), the Gray Bat (*Myotis grisescens*), the Red-cockaded woodpecker (*Picoides borealis*), and the Blackside dace (*Phoxinus cumberlandensis* Starnes and Starnes). One partial status species – the Peregrine Falcon (*Falco peregrines)*, also occurs in the park (Table 12). Table 13 provides more detailed information on each of the federally listed species.

SOUNDSCAPE

A soundscape refers to the total acoustic environment of an area. Both natural and human sounds may be desirable and appropriate in a soundscape, depending on the purposes and values of the park. Soundscapes often vary in their character from day to night and from season to season and can be affected by changes in numbers of visitors who introduce human-caused sound into the environment.

The soundscape of the park includes existing and potential sources of natural sound and potential sources of interference (noise) to natural sounds in the park. The natural soundscape at the park is created by natural processes, including but not limited to sound created by biological and physical components such as wind, running water, birds, and insects. Natural ambient sound is the natural soundscape condition that exists in the park in the absence of noise made by humans. Noise is defined as undesirable human-caused sound (NPS 2000d). Sound can be perceived as noise because of loudness, frequencies, duration, occurrence at unwanted times or from an unwanted source, or because it interrupts or interferes with a desired activity. A sound that is considered neutral or desirable by one person (such as a radio or car engine) may be considered unpleasant noise by another person because of a perception of inappropriateness or disturbance. Noise can adversely affect park resources or values, including the natural soundscape, wildlife, and visitor experience. Sound levels have not been recorded at the park to date.

Cumberland Gap National Historical Park is a serene environment with a soundscape consisting predominantly of wind, birds and other wildlife, insects, and running water. In certain areas of the park where visitors congregate, such as the Visitor Center, the Wilderness Road Campground and picnic area, Daniel Boone Visitor Information Center, Pinnacle Overlook, park headquarters, and some trail heads, human activity sounds can be heard during the day. Sounds expected to be heard in some of these areas are those associated with visitors socializing, automobiles in the vicinity of parking areas and roads, and maintenance equipment. Sounds that would have been expected to have been heard at the Gap such as horses, wagon wheels, and associated sounds are part of the interpretive display at the Daniel Boone Visitor Center. This provides the visitor with an opportunity to "step back in time" and try to imagine what those early pioneers experienced. In more remote areas of the park such as the Recommended Wilderness area, sounds are primarily natural, interspersed with human sounds on trails, campsites, and more popular overlooks and natural features. Sounds associated with the Hensley Settlement are primarily natural, interspersed with voices when visitors are present. Modern day noises most commonly associated with human settlements are absent at the Hensley Settlement. During special events at the park, sounds may be recreated to associate the visitor with historic uses.

Table 13. Federally Listed Species Reported From Cumberland Gap National Historical Park[1]

Common Name (*Scientific Name*)	Federal Status[1]	Habitat and Occurrence
Mammals		
Indiana bat (Myotis sodalis)	E	The Indiana bat is a temperate, insectivorous, migratory bat that hibernates colonially in caves and mines in the winter. The upstream section of Gap Cave is a critical hibernating area for the federally endangered Indiana bat. In spring, reproductive females migrate and form maternity colonies where they bear and raise their young in wooded areas. Males and non-reproductive females typically do not roost in colonies and may stay close to their hibernaculum or migrate to summer habitat. Summer roosts are typically behind exfoliating bark of large, often dead, trees. Both males and females return to hibernacula in late summer or early fall to mate and enter hibernation (Recovery Plan).
Gray bat (Myotis grisescens)	E	Probably the most restricted to cave habitats of any U.S. mammal. Roosts in caves year round. Because of specific rooting and nesting requirements of the species, less than 5% of the available caves are suitable (various authors in USFWS 1982) (Recovery Plan). Summer caves are almost always located within 1 km of rivers or reservoirs over which the bats feed (Tuttle 1976b in USFWS 1982). Feeds exclusively most of year over water along river or reservoir edges (various authors in USFWS 1982). Gray bats may also use Gap Cave for summer habitat (NPS 1998a).
Birds		
Bald Eagle (Haliaeetus leucocephalus)	Delisted / Monitored	Breeding habitat most commonly includes areas close to (within 4km) coastal areas, bays, rivers, lakes, or other bodies of water that reflect the general availability of primary food sources including fish, waterfowl, and seabirds (Andrew and Mosher 1982, Green 1985, Campbell, et al. 1990 in NatureServe 2007). Preferentially roosts in conifers or other sheltered sites in winter in some areas; typically selects the larger, more accessible trees (Buehler, et al. 1991, 1992 in NatureServe 2007). Perching in deciduous and coniferous trees is equally common in other areas (Bowerman, et al. 1993 in NatureServe 2007). Communal roost sites used by two or more eagles are common, and some may be used by 100 or more eagles during periods of high use. Winter roost sites vary in their proximity to food resources (up to 33 km) and may be determined to some extent by a preference for a warmer microclimate at these sites. Avoids areas with nearby human activity (boat traffic, pedestrians) and development (buildings) (Buehler et al. 1991in NatureServe 2007) (Quoted from NatureServe 2007). General habitat characteristics include large to medium sized rivers, deep and shallow water lakes, forested wetlands, riparian areas, cliffs, and various forest and woodland types (conifer, hardwood, and mixed) (Quoted from NatureServe 2007).

Table 13. Federally Listed Species Reported From Cumberland Gap National Historical Park[1] (Continued)

Common Name (*Scientific Name*)	Federal Status[1]	Habitat and Occurrence
Peregrine Falcon (Falco peregrinus)	DELISTED 1999	Various open situations from tundra, moorlands, steppe, and seacoasts, especially where there are suitable nesting cliffs, to mountains, open forested regions, and human population centers (AOU 1983 in Nature Serve 2007). When not breeding, occurs in areas where prey concentrate, including farmlands, marshes, lakeshores, river mouths, broad river valleys, cities, and airports (Quoted from NatureServe 2007) Often nests on ledge or hole on face of rocky cliff or crag. River banks, tundra mounds, open bogs, large stick nests of other species, tree hollows, and man-made structures (e.g., ledges of city buildings) are used locally (Cade 1982 in NatureServe 2007). Nests typically are situated on ledges of vertical rocky cliffs, commonly with a sheltering overhang (Palmer 1988 in NatureServe 2007; Campbell, et al. 1990 in NatureServe 2007). Substitute man-made sites include tall buildings, bridges, rock quarries, and raised platforms (Quoted from NatureServe 2007).
Red-cockaded woodpecker (Picoides borealis)	E	Recorded from the park by Dorothy McConnell in stands of pines on the White Rocks Trail, October 21, 1973 (Barbour, et al. 1979). Today the red-cockaded woodpecker has been extirpated in Kentucky and Tennessee and is found in the far southeastern portion of Virginia. Red-cockaded woodpeckers require open pine woodlands and savannahs with large old pines for nesting and roosting habitat (clusters). Large old pines are required as cavity trees because the cavities are excavated completely within inactive heartwood, so that the cavity interior remains free from resin that can entrap the birds. Also, old pines are preferred as cavity trees because of the higher incidence of the heartwood decay that greatly facilitates cavity excavation. Cavity trees must be in open stands with little or no hardwood mid-story and few or no overstory hardwoods. Hardwood encroachment resulting from fire suppression is a well-known cause of cluster abandonment. Red-cockaded woodpeckers also require abundant foraging habitat. Suitable foraging habitat consists of mature pines with an open canopy, low densities of small pines, little or no hardwood or pine mid-story, few or no overstory hardwoods, and abundant native bunchgrass and forb groundcovers (USFWS 1985) (Recovery Plan).

Table 13. Federally Listed Species Reported From Cumberland Gap National Historical Park[1] (Continued)

Common Name (*Scientific Name*)	Federal Status[1]	Habitat and Occurrence
Fish		
Blackside dace (Phoxinus cumberlandensis (Starnes and Starnes)	T	This minnow (described by Starnes and Starnes in 1978) is endemic to the upper Cumberland River basin, where it is localized in clear headwater streams, usually first and second order. Very few populations have been discovered, and the widespread effects of strip mining are likely to further reduce these. Because of this major threat to survival, the blackside dace has been proposed for rare and endangered status with the Office of Endangered Species. Davis Branch has supported a thriving population of blackside dace in the past. Near the headwaters it predominated over its relative, the southern redbelly dace, but it diminished in numbers and disappeared in lower Davis Branch, where the southern redbelly dace persists (Stephens 2006-2007). Over the years, beaver have become established in Davis Branch and greatly altered the stream habitat in the upper reaches of the creek. The blackside dace numbers in Davis Branch have decreased since the mid 1990s. The blackside dace also occurs in the Fern Lake watershed. The blackside dace was initially identified in Little Yellow Creek by McCoy and McCoy Environmental Consultants (1993) as part of baseline environmental information provided in an application by Apollo Fuels, Inc. to conduct surface mining in the Little Yellow Creek watershed. The Office of Surface Mining Environmental Impact Statement (OSM 1996) information on this in the Fern Lake watershed as follows: Although results of the TDEC and McCoy and McCoy investigations indicate moderate stress to the uppermost reaches of Little Yellow Creek, a thriving population of blackside dace persists in Little Yellow Creek above Fern Lake. Blackside dace were common at all sampling locations, third in frequency of occurrence only to the creek chub and blacknose dace. The continued survival of a healthy population of blackside dace can be attributed to the presence of silt free areas downstream of riffles, which afford suitable spawning habitat, and to an undisturbed zone of riparian vegetation, the shading of which attenuates stream temperature increase during the summer months. Little Yellow Creek was impounded to form Fern Lake. As a result of impoundment, aquatic habitat in Little Yellow Creek was altered. A biological survey of Fern Lake has not been conducted; however, biological community structure following impoundment of upland streams, shifts from minnow and darter dominated stream species to lacustrine species such as bass, bream, and catfish. As a consequence of impoundment, the downstream extent of the blackside dace population in Little Yellow Creek is limited by Fern Lake. In addition, Fern Lake is a barrier to downstream "seeding" of blackside dace to lower reaches of the Yellow Creek watershed. Consequently exchange of genetic information is not possible without direct intervention through transplanting or rearing. Although Fern Lake is a limiting factor to blackside dace, the lake serves as a pollutant sink for moderate siltation and chemical loading associated with upstream land use activity.

Relocation of U.S. 25 East and restoration of the Gap has recreated a more natural soundscape compared to previous conditions. Automobile sounds may be heard in the vicinity of U.S. 25 East; however, once beyond the influence of the highway, natural sounds on the trail predominate, interspersed by visitors walking and hiking the Wilderness Road Trail.

During periods of peak visitation, such as weekends, human-caused sound is of greater intensity than during weekdays when the natural soundscape prevails. This also varies by season and location within the park. Some human-caused sound can be considered acceptable in that it is attendant to purposes and uses for which the park was created. Director's Order 47 (NPS 2000d) requires park units to determine the level of human-caused sound necessary for park purposes, and to achieve that level by reducing noise and restoring the natural soundscape to the greatest extent possible.

CULTURAL RESOURCES

This section describes the characteristics of cultural resources in the park. This assessment is based on a review, the available information in the literature, and contacts made with NPS staff at the park.

Overview of Prehistory

Around 12,000 B.C. Paleoindian groups are thought to have migrated into the Cumberland Gap region. In some areas, these mobile hunter-gatherers subsisted on Pleistocene megafauna, but it is likely that the rich assortment of wild plant foods, white-tailed deer, and small game of the area likely played a "vital role in subsistence strategies" (Ahlman, et al. 2005). During the Archaic Period (ca. 8,000 B.C. to 1000 B.C.), a number of Pleistocene game species became extinct, subsistence strategies became more diversified in response to environmental changes, and ground stone tools appear as Archaic peoples increasingly relied on aquatic resources, wild plant foods, and small game. Settlements consisted of main residential camps with smaller specialized gathering and hunting camps in the uplands (Ahlman, et al. 2005). About 2000 B.C. long-distance trade of copper and artifacts of marine shell began, and toward the end of the Archaic period, numbers and types of stone tools increase and traces of horticulture appear.

About 1,000 B.C. the Woodland Period is indicated by shifts in settlement and subsistence patterns, increased sedentism, and changes in social organization. People began growing plants, making pottery, and using bows and arrows. Burial mounds were erected.

The late prehistoric period (Mississippian Period) began about A.D. 900 with increased social complexity and profound changes in prehistoric settlement and subsistence patterns. Earmarks of this period include the rise of chiefdoms and a reliance on maize agriculture. Toward the end of the period (ca. A.D. 1600) populations in the area reached a peak in prehistoric social complexity and organization, with settlements varying in size from small hamlets to large towns surrounded by defensive palisades. Numerous raw materials and specialized tools and ornaments were imported or traded.

By 1575 A.D. the first European trade goods (metal ornaments made from pieces of kettles) appear in Kentucky and by 1675 European diseases (possibly smallpox) had killed numerous native peoples in the region. By 1750, Lower Shawneetown, the main village of the Shawnee in the eighteenth century, had been established in Kentucky.

History Overview

Virginian Abraham Wood had written about the existence of Cumberland Gap in 1670 (Ahlman, et al. 2005), and recorded history refers to the Gap area as early as 1674, when a young explorer, Gabriel Arthur, followed the Warrior's Path enroute to Fort Henry, Virginia from a trip into the wilderness. Arthur made no direct mention of the Gap, but presumably he crossed through it. However, this was about 80 years before the first formal Euroamerican [English] expedition was made through the Gap.

For many centuries, the 100- to 300-mile-wide Appalachian Mountains, extending from Newfoundland and Labrador in Canada 1,500 miles southwest to central Alabama, had been a natural barrier that inhibited east-west human movement across the North American continent. This vast system of mountains formed a geographical dividing line between the eastern seaboard and the American Midwest.

Cumberland Gap and the adjacent land corridors form a natural passageway through the mountains. Cumberland Gap is a natural feature cut into Cumberland Mountain by the original course of Yellow Creek as it flowed south into Powell River. Adjoining the Gap is Middlesboro Basin, a relatively level area that extends between Pine Mountain and the Cumberland Mountains. The basin is thought to be the remains of an ancient meteor crater or perhaps caused by the collapse of an underground cavern. Adjacent to the basin is the Yellow Creek Valley leading into an area known as "The Narrows," a gap that crosses Pine Mountain and opens up access into the Bluegrass county of Kentucky.

For centuries, Native Americans had followed the Warrior's Path from the Potomac River down along the southeast side of the Appalachian Mountains, crossed through the Gap, and then turned north to what later became known as the "Dark and Bloody Ground" in the States of Kentucky and Ohio. The path connected the Ohio and the Shenandoah valleys and gave prehistoric and historic people access to the Mississippi River. The Warrior's Path was a crucial transportation route to many generations of Native Americans who used it for trade, travel, raiding, and to follow game herds. Migrating bison were known to use Cumberland Gap to reach Kentucky where Daniel Boone reported large herds of bison grazing on the verdant pastures.

The Gap was first explored, described, and mapped by Dr. Thomas Walker in 1750 after hearing Native Americans describe the pathway that went through— not over— the mountains. The previous year King George II had granted the Loyal Land Company eight hundred thousand acres of land west of the Cumberland Mountains, and Walker served as the chief agent and surveyor for the company. There were no requirements for settlement, only survey of parcels that grantees wanted. However, onset of the French and Indian War in 1754 effectively closed the new frontier to further exploration until the late 1760s when Daniel Boone and other long-rifle hunters began to hunt in the wilderness country.

In 1775, a group of North Carolina entrepreneurs under the leadership of Colonel Richard Henderson formed the Transylvania Company, which acquired 20 million acres of western lands from the Cherokee Indians to create the new state of Transylvania. Because of their knowledge of the area, frontiersman Daniel Boone and about 30 other long-rifle hunters/woodsmen were hired to blaze a trail through this wilderness from what is now Kingsport, Tennessee to the vicinity of the present day City of Richmond, Kentucky (Shattuck 1999). The land deal was hotly contested by a second group of homesteading pioneers who successfully petitioned the newly formed Virginia legislature to establish the new county of Kentucky west of the Cumberland Mountains, effectively quashing the proposed state of Transylvania (Shattuck 1999).

Despite frequent loss of lives in encounters with Native Americans, over the next 17 years more than 20,000 settlers followed "Boone's Trace" through Cumberland Gap to Kentucky, and by the time Kentucky had been admitted to the Union, over 100,000 people had passed through the Gap. In 1795, the Kentucky legislature mandated the construction of a "good wagon road" between Crab Orchard and Virginia, and by 1796 the toll route had become known as the "Wilderness Road." Until the National Road (the Cumberland Road) was completed in 1818, the Wilderness Road was a main commerce conduit (both east and west) and the primary overland route for travelers and livestock moving west (Ahlman, et al. 2005). Eventually, development and use of other transportation routes caused a decline in the importance of the Wilderness Road, and it was abandoned by 1840.

During the Civil War, the Gap was thought to be strategically important to both the Confederate and Union armies; that is, both sides felt invasion would come through the Gap. There was no military railroad near the Gap, so portions of the Wilderness Road (also known as the State Road, the

Wilderness Turnpike, or the Kentucky Road) were used to transport supplies, troops, and ordnance. Called the "Keystone of the Confederacy" and the "Gibraltar of America," the Gap exchanged hands three times and was held and fortified "against the invasion that never came" (FHWA 2006). Confederate General Zollicoffer first occupied the Gap on Nov. 13, 1861 but retreated when a superior force under Union General Morgan approached. After fortifying the Gap, General Morgan also was forced to retreat when Confederate General Bragg and his troops entered the area in 1862. Union Generals Shekelford and DeCourcy approached the Gap in 1863, forcing Confederate General Frazier and his 2,000 men to surrender. Cudjo's Cave (also known as King Solomon's Cave and now known as Gap Cave) was used for shelter and mined for saltpeter for gunpowder, leading to the contemporary description as "Soldier's Cave."

During the Civil War, Confederate Brigadier General Felix Zollicoffer personally supervised the construction of the earthen fortifications at Cumberland Gap. Preparations for battle by both sides involved construction of earthworks and battlements, leaving some areas badly scarred. As described on September 9, 1863 by O.G. Swingburg from the 125th Ohio:

"The trees, which had formerly covered the mountains, were all cut down. Their trunks lie tangled and scattered in all directions to prevent rapid charges of infantry. Surely, a valley of death could not have been more skillfully constructed. All who walked that road today would agree that had the charge been made, it would have been the last road walked in eternity. It would have been murder to have ordered that assault." (FHWA 2006).

After exchanging the road through the Gap several times with the Confederacy, the Union Army abandoned the road in 1866, but it continued to serve as a transportation corridor and trade route. Settlers and entrepreneurs purchased plots of land near the Gap and at intervals along the route. At these trading posts and other establishments, local products could be shipped eastward, and merchandise moved to the west.

During the 1880s and early 1890s, English capital financed a local "boom and bust" cycle based on utilization of the natural wealth of mineral deposits in the untapped seams of coal and iron ore in the Cumberland Mountains. This activity resulted in the establishment of Middlesborough (now Middlesboro), Kentucky, Cumberland Gap, and Harrogate, Tennessee. Millions of dollars were invested in railroad building, tunnels, steel mills, and coal mines. Railroads bypassed the Gap after the Civil War, and it was not until advent of the automobile that interest in the Gap was rekindled.

In 1908 the U.S. Bureau of Public Roads built the Government Pike, a 2.5 mile-long "macadamized road" (e.g., made of layers of compacted crushed stone) to connect Middlesboro, Kentucky to Cumberland Gap, Tennessee. This was one of several "Object Lesson Roads" constructed to "prove the efficacy of new road building techniques" (Woods 2003). Unfortunately increased traffic led to numerous accidents on the narrow roadway, so, in 1916, the Government Pike was further extended, becoming part of the Dixie Highway system in 1916 (FHWA 2006). By 1925 the Gap was included in planning for U.S. 411, and a year later, the eastern leg of U.S. 25 passed though the Gap. U.S. 58 replaced U.S. 411 in 1934.

Tourist attractions, such as Soldier's Cave (Cudjo's Cave, now known as Gap Cave), helped attract visitors to the area. the Gap, the cave, and the surrounding area had been purchased by Lincoln Memorial University in 1920. Electricity was installed, and accommodations for overnight lodging were provided. The University leased the cave to various operators over the years until it was acquired by the NPS in 1992.

Recognizing the national significance of Cumberland Gap in the early years of American westward expansion, Congress established the park in 1940 to protect 20,000 acres of forested mountain shared among Tennessee, Kentucky, and Virginia. However, the existing transportation systems did not reflect the historic nature of the Gap and the Wilderness Road as they had appeared during the years from 1780 to 1810, so in 1973 the restoration of the Gap began with enactment of Public Law 93-87.

This law directed the NPS to construct tunnels through Cumberland Mountain to remove traffic from the historic corridor and improve traffic safety.

In 1979, design began for the enormous project of rerouting two U.S. highways through twin tunnels 4,600-feet in length, new four lane approaches, highway interchanges, bridges (pedestrian, railroad, and roadway), hiking trails, and parking. Despite encountering systems of underground streams that played havoc with designs, the tunnels were opened to traffic (about 32,000 vehicles per day) in 1996.

Once the new tunnels were in place and traffic was removed from the historic scene, the second part of the project began. NPS historian Jere Krakow (1987) conducted extensive historical research that led to descriptions of physical features of the area, using historic documents, photographs, journals, and traveler's accounts. Visual Information Specialist Michael Hart combined fieldwork, cartography, survey, and artistic skills with Krakow's research to help verify the original landscape. These efforts eventually led to discovery of what is thought to be the original alignment of the Wilderness Road and other significant early routes "as well as the approximate 'historic' contours of the topography of the "saddle of the Gap" (Woods 2003). A three-dimensional grading plan was developed, allowing engineers and landscape architects to return the Gap to contours that likely existed in 1780. In 2002, a massive planting effort used native plants and trees to restore "the barren landscape into a virtual forest overnight" (Woods 2003).

The National Register eligibility of the park's cultural resources is based on several factors: first, the way in which they reflect the westward expansion of the United States via the Gap and the Wilderness Road. Secondly, part of the eligibility is the importance of the Warrior's Path in Native American history and the association of the area with frontiersmen and explorers such as Daniel Boone. Other resources reflect development of isolated mountain communities and the Appalachian lifestyle such as the Hensley Settlement during the 20th century.

Archeological Resources

As of August 2008, the NPS Archeological Sites Management Information Systems contained entries for 136 archeological sites in the park. Of the known sites, 92 are in Kentucky, 9 are in Tennessee, and 35 are in Virginia. In the last five years, most of the sites have been re-located and examined for condition issues. Currently, 116 are listed in Good condition, 5 in Fair condition, and 6 in Poor condition. Nine others have not been checked. Most of the sites have been photographed and recorded with a GPS. It should be noted there several sites currently classified as "potential" that may be added once they have been found and verified. Also, additional entries are expected once the results of projects conducted during FY2008 are available.

Only a minute portion of the park has ever been examined beyond the cursory pedestrian level so the depth of information is limited. The majority of the sites are historic because these tend to have visible surface features and/or artifacts, whereas very few surveys have been conducted using methods that detect prehistoric sites. The list includes 57 domestic sites such as house and farmsteads, generally occupied during the early 20th century. There are also several manufacturing sites such as a brewery and coal processing facility. At least three coal mines have been identified. Transportation-related resources include three railroads and six roads. As for the Civil War, the database currently includes four camps, six forts, nine rifle pits, seven batteries, and several other related sites. Smaller categories of historic sites include a school, hotels, and a tavern. Prehistoric sites include ten rock shelters and caves, plus three other sites.

Cultural Landscapes, Including Historic Buildings, Structures, and Districts

The entire Cumberland Gap National Historical Park is listed on the National Register of Historic Places (National Register), along with the Cumberland Gap Historic District (east of Middlesboro), and the Hensley Settlement. The Cumberland Gap Historic District includes historic roadways, three segments of the Wilderness Roads, Civil War features, the ruins of an Iron Furnace, and Daughters of

the American Revolution markers. Because these structures are such an integral part of the park's potential cultural landscape, they have been described further under "Cultural Landscapes" below.

Buildings within the Hensley Settlement have been designated as a Historic District eligible for the National Register of Historic Places. Thirty-five structures, including the Brush Mountain School, contribute to the National Register significance of the District.

Despite the fact that none of the landscapes at Cumberland Gap National Historical Park have been formally inventoried or designated as cultural landscapes, it seems apparent that at least two historic areas of the park – the Hensley Settlement and Cumberland Gap Historic District – include many characteristics of a cultural landscape.

The potential vernacular cultural landscape at Hensley Settlement consists of a community of 12 scattered farmsteads situated on an isolated plateau on Brush Mountain. This landscape was first carved out of the wilderness during the 1800s by C. and R.M. Bales who cleared much of the 500-acre plot of trees and brush, and fenced meadows for grazing and farming. They also leased and cleared the nearby Bailes [Bales] Meadows. Burton Hensley purchased the land from the Bailes in 1903 and divided it into 16 portions that were deeded to each of his principal heirs, including his son-in-law, Sherman Hensley (Cox 2001). Sherman Hensley purchased additional acreage and moved his family onto the mountain in December 1903. Shortly after, other members of the Hensley and Gibbons families came to the settlement, began planting crops, and erecting homes, eventually creating what has come to be known as Hensley Settlement.

The potential cultural landscape at Hensley includes the buildings described above, as well as other landscape elements such as trails, meadows, native vegetation, spatial organization, transportation routes, and scenic mountain viewsheds. The strategic and isolated location of the Hensley Settlement contributes to the landscape.

Several trails ran from Virginia or Kentucky to the Hensley Settlement; early settlers carried their belongings over these trails onto the mountain using sleds and mules. Location of these trails was based on topography, stream courses, homesteads, and connections to roadways outside the mountain community. Using readily available timber, the cleared meadows were often fenced with split rail "worm" fences of oak or chestnut. Woods surround the cleared areas. The balance of cleared, farmed, and grazed areas reflects the amount of land and type of farming products families could cooperate to produce, as well as area topography, soils, and historic uses.

As additional Gibbons and Hensley relatives came to the settlement, they built farms adjacent to existing homesteads, often along creeks. All the farmsteads in the settlement have a definite pattern of organization centered on the focal point of home, barn, and outbuildings. Lacking electricity, roads, or mechanized equipment such as tractors or chainsaws, land clearing and construction of the buildings and fences at the Hensley Settlement involved an extraordinary amount of human labor and talent. Stone and log buildings were erected using little more than hand tools, with mules used to haul the heavier loads. Design of these structures and their furnishings was drawn from personal experience and remembered pioneer techniques from earlier times. The use of indigenous native materials contributes heavily to the feeling and historic ambiance of the area.

Cumberland Gap Historic District, also a National Register property, forms a second potential cultural landscape within the park. Initially, the landscape at Cumberland Gap was shaped by the geology of the area, native vegetation, and the associated land forms and spectacular viewsheds. Over nearly three centuries, human use of the Gap added transportation corridors, Civil War facilities, a variety of structures and landscape, and vegetation features, resulting in major changes to the original historic scene viewed by Daniel Boone and other long-rifle hunters. Recent removal of intrusive modern facilities and restoration of the Gap returned the overall area to the approximate historic setting/cultural landscape visible during the period from 1780 to 1810 and helped preserve historic resources at Civil War sites.

Primary among the character-defining landscape features at Cumberland Gap are the historic roadways, including the restored Wilderness Road, the Upper and Lower Virginia roads, Kentucky State Road, Harlan Road, Fort McCook-Fort Lyon Road, Battery # 7 Road, and the Fort Farragut Trail Road.

The types and arrangement of Civil War features and structures on the landscape afford a glimpse into the strategies of the two armies and into the relationship of topography in this area to the war effort. These installations include Fort Foote, Fort Nathaniel Lyon, Fort Robert L. McCook, Fort Farragut, Fort Edgar, Morgan's Commissary Site, Battery # 7, and the Union Powder Magazine site.

Also present in this landscape are the Iron Furnace Ruin, representative of the period of industrial expansion in the area, and the Indian Rock and Daniel Boone's Trail D.A.R. markers.

Ethnographic Resources

As defined by the NPS, an ethnographic resource is a site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

In this environmental document, the term "ethnographic resources" will also be used to refer to a special community of people, including the descendents of the original settlers, who have a shared identity and close relationship to the park. Despite having been physically relocated outside the park, this ethnographic community continues to assign significance to remembered places and lifeways. Their practices and beliefs are rooted in the history of the park, and continuing association with the park is essential to the survival of their cultural traditions.

They have deeply felt long-term interest in the integrity of resources within the park. Sites identified as traditional cultural properties by the ethnographic community would be evaluated for their potential National Register significance and would be considered eligible for the National Register until evaluation is completed.

Ethnographic resources are "about people and the ethnographic resources, or traditional park sites, structures, objects, landscapes and natural resources, they define as significant to their present way of life" (NPS 1998c). Ethnographic resources at Cumberland Gap National Historical Park are related to two different cultural groups. First, ancestors of Native Americans such as the Shawnee, Iroquois, Delaware, and Cherokee lived in the region and used these mountains for centuries for hunting, gathering, and resource procurement. While most of these tribal groups no longer reside in the general area, their tribal history and beliefs may still commemorate the valued places and events they remember. Representatives of the Absentee-Shawnee Tribe of Oklahoma, Cherokee Nation of Oklahoma, Eastern Shawnee Tribe of Oklahoma, Eastern Band of the Cherokee Indians, Shawnee Tribe, and United Keetoowah Band of Cherokee Indians were contacted during the course of scoping for this plan and coordination with these tribes continues.

A second group of people, former park residents and their descendents, form a traditional users group as defined in Management Policies and NPS-28, Cultural Resource Management Guideline (1998). During the 1700s and 1800s, immigrants from countries such as Scotland, England, and Germany came to settle in the isolated valleys and along streams in the mountains of Kentucky, Virginia, and Tennessee. As many as 250,000 Scotch-Irish immigrated to America between 1717 and 1776, and were the dominant cultural group in settling the entire length of the Appalachians. Ulster provided far more immigrants in this area than Germans or Scots (Jones 1992). In the early 1900s, as most of the more fertile land had become occupied by settlers, some latter-day pioneers moved farther into the mountains.

These fiercely independent and deeply religious pioneers forged their own traditions in what is sometimes known as Appalachian culture. They were self sufficient, relying on each other for support in farming, raising barns, and stock rearing. Mountain communities were isolated and difficult to reach because no formal roads led to the new settlements, such as the one at Hensley. These settlers

drew upon cultural traditions and remembered lifeways of their parents and grandparents to create a community, literally, built by hand of wood, stone, and earth. Most of their basic subsistence was either home made or grown, and solutions to problems were innovative. Education was important to these settlers, so they built schools, and recruited teachers. The resulting community was a "way of life more similar to the pioneer period of the 1780s than that of the twentieth century" (Shattuck 1999). An example of this is the Hensley Settlement, a remarkable community on Brush Mountain that maintained a 19th century life style well into the 20th century. Two families, Gibbon and the Hensley, made the settlement their home. The last person to occupy the settlement was Sherman Hensley, who left the mountain in 1951. Over 400 relatives of the Gibbon and Hensley families hold reunions on a regular basis, and many still live in the immediate area.

SOCIOECONOMICS

Cumberland Gap National Historical Park is located in Bell and Harlan Counties in Kentucky; Lee County, Virginia; and Claiborne County, Tennessee. Only a small portion of the park is located in Harlan County. The area is primarily rural, but several communities are located near the western portion of the park (see Figure 1). The City of Middlesboro, Kentucky is located near the northwestern section of the park and the City of Harrogate, Tennessee is located near the southwestern section of the park. The Town of Cumberland Gap, Tennessee is surrounded by the park and is located between Middlesboro and Harrogate.

Harlan County contains the largest estimated 2004 population in the region with 31,927 persons, followed by Claiborne County (30,726), Bell County (29,672), and Lee County (23,846) (Epodunk 2006). Middlesboro, the gateway to the park from the north, is the largest community in the region with an estimated 2003 population of 10,266 persons. Harrogate had an estimated 2003 population of 3,974 persons and Cumberland Gap had an estimated 2003 population of 195 persons. The population of Claiborne County and Lee County was estimated to have grown 2.9 percent and 1.1 percent, respectively, from 2000 to 2003, while the population in Bell and Harlan Counties dropped 1.3 percent and 3.8 percent, respectively, during the same period. The City of Middlesboro lost approximately 1.1 percent of its population between 2000 and 2003, and the Town of Cumberland Gap lost approximately 4.4 percent of its population during the same period (Epodunk 2006; U.S. Census Bureau 2006). Statistics for Harrogate indicate that the population grew by 38.7 percent between 2000 and 2003, but this growth is reportedly attributed to a geographical change in reporting for this community (U.S. Census Bureau 2006).

The population of the Kentucky counties is projected to decrease slightly in the future. The University of Louisville Kentucky State Data Center projects that 28,118 persons will reside in Bell County and 29,136 persons will reside in Harlan County by 2020 (University of Louisville 2006). The population of Lee County is also projected to decrease slightly in the future. The Virginia Employment Commission projects that 22,001 residents will be living in Lee County in the year 2020 (Virginia Employment Commission 2006). Claiborne County is projected to increase in population slightly to approximately 32,039 in 2010 according to the state Department of Health (Tennessee Department of Health 2006).

In Bell and Harlan Counties, retail trade is the largest employer, followed by manufacturing in Bell County and accommodation / food service in Harlan County. Bell County contained 1,955 retail employees in 1997 and Harlan County contained 1,261 retail employees during that year. Manufacturing employed 858 employees in Bell County and accommodation / food service employed 457 employees during 1997. Middlesboro is defined as a micropolitan statistical area by the U.S. Census Bureau. The Middlesboro market serves approximately 100,000 retail customers in northern Tennessee, western Virginia, and southeastern Kentucky (Bell County 2004). The park often buys supplies and parts from venders in Bell County. To the south of the park, manufacturing led the employment ranks in Claiborne and Lee Counties, followed by retail. Claiborne County had 3,584 persons employed in manufacturing in 1997, while Lee County had 784. Claiborne County had 736 retail employees and Lee County had 578 retail employees during that year. Many of the manufacturing employees in Claiborne County were employed in the household and institutional

furniture manufacturing sector. The major employer in this sector was England, Inc. (Claiborne County Chamber of Commerce 2006). Recent (2003 – 2007) developments in the vicinity of the park include the following activities.

- A 500 acre T.J. Asher Industrial Park in eastern Bell County, near the Harlan County Line.
- Whitmer Industrial Park, located in Bell County.
- Bell County Technology and Training Park, located in Bell County.
- Industrial parks in Lee County: Lee County Industrial Park, located south of Pennington Gap.

The 500-acre T.J. Asher Industrial Park is being constructed in eastern Bell County near the Harlan County line. A 250-acre airport may be constructed adjacent to this industrial park, if approved by the Middlesboro / Bell County Airport Board (Southern Kentucky Economic Development Corporation 2003).

Coal mining is predicted to continue into the future in the region. Harlan County has the third largest estimated coal reserve in Kentucky, and Bell County has the eleventh largest estimated coal reserve (Kentucky Coal Association 2006). Lee County has the fifth largest estimated coal reserve in Virginia, although the reserve is less than one percent of the estimated reserve located in Harlan County (Virginia Polytechnic Institute and State University 2006). Coal reserves in the entire State of Tennessee are estimated to be just slightly greater than the Lee County estimated reserves (Knoxville News Sentinel 2005).

Local officials in Bell and Claiborne Counties anticipate that completion of U.S. 25E as a four lane divided roadway from I-81 in Tennessee to I-75 in Kentucky, will attract motorists looking for a "short cut" alternative to I-40 / I-75. Tennessee officials are also working to obtain "national scenic byway" status for U.S. 25E. The roadway currently has that designation to the north of the Kentucky state line. Additional traffic could raise awareness of the region, as well as attract additional highway related services.

The Cumberland Gap National Historical Park is the largest tourist attraction in the area and the park adds a great deal to the local economy. A 2001 study determined that visitors to Cumberland Gap National Historical Park spent from $35 to $163 per party per day depending upon whether the visitors were local day visitors or visitors staying in an area hotel (Michigan State University 2001). Visitors that were camping spent approximately $83 per party per day. In 2001, visitors to the park spent $38.98 million, which supported a total of $46.84 million in sales, $16.91 million in personal income, 1,006 jobs, and $26.6 million in value added to the local economy. As a result, increasing the number of tourists that visit the area and expanding their length of stay is a priority of the local communities.

Middlesboro and Bell Counties are trying to promote tourism to attract visitors to the area. Middlesboro is the northern gateway to the park, and the park visitor center is also located in Middlesboro. Bell County has a desk at the park visitor center to promote tourism in its county. Other attractions include the Bell County Coal Mining Museum and Coal House, the Alexander A. Arthur Museum, the Bell County Historical Society and Museum, the Henderson Settlement & Log House Craft Shop, the annual Cumberland Mountain Fall Festival, and Pine Mountain State Resort Park in nearby Pineville.

Harlan County is also trying to promote tourism in its area. The county has a number of different attractions such as the Kentucky Coal Mining Museum, Black Mountain Recreational Park for off-road vehicles, Big Black Mountain (the highest peak in Kentucky), Kingdom Come State Park, Blanton Forest, and Portal 31 (coal mine). The county is also home to several annual festivals such as the Black Bear Festival, the Southern Shine Crawl, the Poke Salad Festival, the Harlan Bluegrass Festival, and others.

Claiborne County contains the Abraham Lincoln Museum and Library at Lincoln Memorial University, the Speedwell Academy, and the historical Town of Cumberland Gap. Prior to construction of the Cumberland Gap tunnel, U.S. 25E passed through Cumberland Gap, Tennessee. Construction of the tunnel and relocation of U.S. 25E resulted in people bypassing businesses in the town. The community is trying to revive its economy by promoting a mountain lore theme and becoming a destination (NPS 2004).

Lee County contains a number of tourist attractions including Wilderness Road State Park, Gap Cave, Cave Springs Recreation Area, and Daniel Boone Wilderness Trail. A hotel developer has expressed interest in a hotel in far western Lee County along U.S. 58, but lack of sewage treatment has been a problem in gaining approval of this facility (Lee County 2004).

The Comprehensive Regional Development Strategy, prepared by the Cumberland Valley Area Development District, set a goal to escalate efforts to develop the tourism industry throughout the district (Cumberland Valley Area Development District 2005). The strategy encourages improving the parks in the area, including Cumberland Gap National Historical Park, to attract more visitors. The strategy also encourages the development of new industrial parks to attract industry to the region.

VISITOR USE AND EXPERIENCE

Recreational visitation at the park increased from 85 to 93 percent during each decade of the 1960s, 1970s, and 1980s. Between 1990 and 2000, the visitation increase lowered slightly to 69 percent. By 2000, over 1.5 million recreational visitors were going to the park each year, according to park statistics. The count procedure was refined in 2000 to eliminate potential double counting, resulting in a count of 887,000 recreational visitors in 2001. Between 2001 and 2005, visitation increased approximately 13 percent, resulting in slightly over one million recreational visitors in 2005. Summer months are generally the highest visitation months for the park. However, October was the strongest month for recreational visitation in 2003, probably due to an article featuring the park that was published in a national magazine, in addition to this being the season of fall colors.

Cumberland Gap National Historical Park is not considered a destination park. Most visitors stop at the park on their way to some other destination, with 67 percent of the visitors at the park staying less than four hours (University of Idaho 1999). The park also attracts families from the surrounding area. According to a visitor study conducted in 1999, approximately 65 percent of the visitors are family groups and approximately 47 percent of the visitors to the park are from Kentucky and Tennessee. The most popular activity at the park is sightseeing from the Pinnacle Overlook. Pinnacle Overlook is the most visited feature in the park. At an elevation of 2,440 feet, visitors have a spectacular view of Kentucky, Tennessee, and Virginia. Low cost shuttles between the visitor center and the Pinnacle Overlook are offered when staff is available. The survey indicated approximately 81 percent of the recreational visitors drive to the Pinnacle.

Other popular activities at the park are tours of the Hensley Settlement and the Gap Cave. Hensley Settlement is a restored mountain community located atop isolated Brush Mountain. Visitors can walk through hewn chestnut cabins and learn about the self sufficient lifestyle of the Hensley and Gibbon families, who continued living a pioneer life style into the 1950s. The settlement is accessible by hiking, horseback, or seasonal shuttle. Tours are provided by NPS staff from May through October. The Hensley Settlement shuttle tour is $10 for adults and $5 for children and senior citizens with a Golden Age passport. In 2005, approximately 3,266 persons toured the Hensley Settlement via the shuttle tour. Gap Cave is located in the park just to the north of Cumberland Gap, Tennessee. The cave is characterized by mammoth rooms, impressive stalagmites and stalactites (including one of the largest known stalagmites at 60 feet tall), and a stream that flows out of the cave that has historically powered a saw mill, a granary mill, and blast machinery for the Iron Furnace. In the past, the cave contained electric lighting and was subject to vandalism. However, the park recently removed the lights and restored the cave to near original condition. Tours begin in the Daniel Boone parking lot. The Gap Cave tour is approximately 1 mile long and travels through four levels of the cave. Tours are provided

throughout the entire year and on weekends only from January 1 through March 31. The Gap Cave tour is $8 for adults and $4 for children and senior citizens with a Golden Age passport. The Hensley Settlement shuttle trip takes four hours and the Gap Cave tour takes two hours. Visitors tend to choose one tour over the other, but many take both tours.

A fitness trail is located near the Visitor Center. The fitness trail is 2 miles long. Approximately 100 people from Middlesboro area come each day to use the fitness trail.

A proposal to strip mine coal in the Fern Lake watershed was defeated, partially due to the impact on the viewshed from the Pinnacle (NPS 2004). In 2001, Congress approved the Fern Lake Conservation and Recreation Act (NPS 2006b). Its goal was to protect Fern Lake and its surrounding watershed lands to ensure the drinking water supply for the City of Middlesboro. The act authorized the purchase of 4,500 acres of Fern Lake watershed lands and expands the Cumberland Gap National Historical Park boundary to incorporate the lake and its watershed. This acquisition would also protect the vista from the Pinnacle Overlook, one of the park's most valuable scenic resources. It will also provide an excellent opportunity for additional recreational activities in the park.

Wilderness Road Campground is located on the south side of the park to the east of Cumberland Gap, Tennessee. The campground has 160 wooded campsites for tent, trailer, and recreational vehicle campers. In addition, the park has backcountry campsites located at Gibson Gap, Chadwell Camp, Martin's Fork, Hensley Camp, and White Rocks. Permits are required for backcountry camping. Table 14 shows the number of campers that stayed in the park overnight from 2003 to 2005.

Table 14. Overnight Campers at Cumberland Gap National Historical Park From 2003 to 2005

Location	2003	2004	2005
Wilderness Road Campground	12,142	13,271	11,761
Backcountry campers	1,742	1,734	1,579

During 2005, September was the busiest month for the Wilderness Road Campground with 2,120 campers, and October was the busiest month for camping in the backcountry with 333 campers.

SCENIC RESOURCES AND VISUAL QUALITY

The park features a wide variety of high quality scenic resources, including:

- Pinnacle Overlook, which provides a breathtaking view of Fern Lake and the surrounding valley, the tri-state corners area, the southern end of the park, Town of Cumberland Gap, Powell River Valley, and Middlesboro, Kentucky.
- The Fern Lake watershed consists of approximately 4,500 acres and contains Fern Lake and the surrounding heavily wooded valley. These resources provide high quality scenic vistas.
- Hensley Settlement, which combines highly scenic qualities of a remote mountain top plateau with over 40 restored historic structures.
- Gap Cave and numerous other caves, which provide a high quality subterranean visual experience. For example, Gap Cave is known to contain one of the most highly diverse series of cave formations in the region.
- White Rocks and White Cliffs, located at the northeastern end of the park that provide a breathtaking view of massive vertical cliffs used by pioneers as a landmark as they travelled the Wilderness Road.
- Wilderness Road restoration area, which provides the visitor with a unique view of the original path taken by pioneers traveling through the Gap.

- Martin's Fork Wild and Scenic River, which provides views of a Kentucky State protected river in an isolated wilderness setting.
- Over 70 miles of backcountry trails, largely within the Recommended Wilderness area, which provide a wide variety of high quality scenic views from the top of Cumberland Mountain.

These scenic resources, when combined, provide a highly diversified visual experience for park visitors.

TRANSPORTATION

The history of Cumberland Gap is based upon transportation. The Gap was the geologic gateway to the west through the central Appalachian Mountains. Before 300,000 pioneers traveled the Wilderness Road through the Gap in the late 1700s and early 1800s, migrating animals used this path in search of food and shelter. Native Americans also used the Warrior's Path to travel between the Great Lakes and the coasts of Carolina and Georgia to trade, hunt, and conduct warfare (NPS 1979b).

Cumberland Gap National Historical Park is located at the juncture of the Kentucky, Tennessee, and Virginia state lines. The western section of the park is located near Cumberland Gap, Tennessee, and the park straddles the Kentucky / Virginia State line for approximately 18 miles northeast of that community. The park is approximately 2-3 miles wide and parallels U.S. 58 in Virginia. U.S. 58 traverses the southern portion of the state from west to east near the Virginia / Tennessee and the Virginia / North Carolina state lines. While the western terminus of U.S. 58 is Cumberland Gap, Tennessee, only a very small portion of the roadway is located in Tennessee. The roadway primarily provides access to a number of Virginia communities, including Martinsville, Danville, and Virginia Beach. The roadway is a four lane divided facility near the park and is either under construction or planned for construction as a four lane divided roadway throughout Virginia. In Lee County, approximately 5 miles of U.S. 58 remain to be improved to four lanes.

Primary north-south access in the area is provided by U.S. 25E. U.S. 25E connects with I-75 at Corbin, Kentucky, approximately 47 miles north of the park, and with I-81 near Morristown, Tennessee, approximately 51 miles south of the park. I-81 intersects I-40, one of the primary east-west routes in the United States, only 8 miles to the west of Morristown. Truck drivers and other long distance travelers have discovered that U.S. 25E will save nearly 30 miles over using I-75 and I-81/I-40 between Corbin and Morristown. The grades are also less severe and allow heavy trucks to avoid the five percent grade on I-75 at Jellico Mountain, near the Tennessee – Kentucky state line. As the roadway is a four lane divided facility in Kentucky and Tennessee, the "short cut" may save time as well as mileage.

In 1996, the Cumberland Gap Tunnel was opened to traffic after five years of construction. The tunnel is in the park and is owned by the NPS. The States of Kentucky and Tennessee operate and maintain the tunnel for the park, but the park provides law enforcement in the tunnel and approaches - one mile into Kentucky and one-third mile into Tennessee (NPS 2004). The tunnel was created to eliminate a dangerous 2.3-mile section of U.S. 25E across Cumberland Gap that linked Cumberland Gap, Tennessee and Middlesboro, Kentucky. Elimination of this segment of U.S. 25E also allowed restoration of the original Wilderness Road across the Gap. The tunnel consists of twin tubes, each 4,600 feet in length, with two lanes, one way roadways in each tube. The tunnel is a state-of-the-art facility, with polyvinyl chloride lining, high pressure sodium lighting, and jet fan ventilation. Sensors collect data on air quality and traffic characteristics, and cameras monitor 100 percent of the tunnel for safety and security (Cumberland Gap Tunnel Authority 2004). All employees are trained in emergency medical response, firefighting, and hazardous materials. An ambulance and a fire truck are housed at each tunnel portal. Approximately 100 vehicles per day, transporting hazardous materials, are escorted through the tunnel while other traffic is stopped. Explosives are banned from the tunnel without escort. Pedestrians and bicycles are also banned from the tunnel for safety; the escort vehicle is used to transport these modes. The tunnel is considered a regional Intelligent Transportation

System center. Employees report to the Kentucky Transportation Cabinet Traffic Center in Frankfort. There are dynamic message signs on I-75 and I-81 that provide information on traffic problems on I-75, I-81, I-40, and U.S. 25E.

The tunnel is constructed to handle an earthquake of 4.0 magnitude or less on the Richter scale. The tunnel also has other safety features for motorists. Turbine fans are mounted on the ceiling every 600 feet in the tunnel and turn on automatically when air quality deteriorates to a specific level. Fluorescent and low pressure sodium lights provide illumination in the tunnel and include a transition zone at tunnel entrances and exits to help drivers vision adjust to the artificial or natural light, as required. Pedestrian cross-overs connect the tunnel tubes every 300 feet and contain fire hose and extinguishers, an alarm, and a telephone.

The Tunnel Authority can monitor all parts of the tunnel 24 hours a day. At the first sign of an accident, traffic is stopped in that tube. Firefighters are dispatched to the scene and the On Scene Commander assesses the situation and calls for added help, if required. An ambulance is usually the next responder. Ambulances and fire trucks are housed at each portal. If additional support is needed, appropriate personnel from Claiborne County, Bell County, or Middlesboro are called. Tunnel emergency personnel can respond to emergencies as far away as the campgrounds if needed. However, since their primary responsibility is the tunnel, they only respond off site when absolutely necessary.

In the case of apparent Homeland Security issues, traffic is stopped and a National Park law enforcement ranger takes over enforcement. Breakdowns are treated as potential Homeland Security issues. The vehicle is quickly towed outside the tunnel by a Tunnel Authority wrecker.

Kentucky S.R. 988 is located in the northwest section of the park and provides access between Pinnacle Road and the Sugar Run Picnic Area. The roadway is a two lane facility with ten- to eleven-foot striped lanes and no paved shoulders. This section is owned by the park. To the north of Sugar Run, S.R. 988 continues north and intersects with S.R. 188, which provides access to U.S. 25E near Meldrum, Kentucky. To the north of Sugar Run, the roadway is outside of the park boundaries and is owned and maintained by the State of Kentucky.

The Shillalah Creek Trail is an unpaved roadway from Kentucky S.R. 217 to Hensley Settlement. This roadway is closed to general motor vehicle traffic with the exception of landowners that live along the roadway. This trail is also used by the NPS to provide van tours to the Hensley Settlement.

Tiprell Road is a paved roadway located in Tennessee in the southwest section of the park. The two lane roadway is 18 feet wide and is not striped. The roadway provides access between Cumberland Gap, Tennessee and Tennessee S.R. 63 near Arthur, Tennessee. Tiprell Road also provides sole access to Tiprell, Tennessee.

Harlan County, Kentucky, located at the northeast tip of the park, has no vehicular access to the park. Lee County, Virginia has access at Civic Park trailhead and at Route 690 at Caylor, which leads to the Chadwell Gap trailhead.

U.S. 58 near U.S. 25E had an average annual daily traffic of 6,380 vehicles per day in 2005 (Tennessee Department of Transportation 2006). In Lee County, U.S. 58 had an average annual daily traffic of 6,900 vehicles per day in 2004 near the Tennessee state line (Virginia Department of Transportation 2006). Near the east end of the park, average annual daily traffic on U.S. 58 was 3,400 vehicles per day in 2004. The level of service on U.S. 58 near Cumberland Gap, Tennessee and Lee County, Virginia is an "A," which is a measure of traffic congestion on a roadway facility that ranges along a continuum from level of service "A" (free-flowing conditions) to level of service "F" (bumper to bumper congestion). Traffic volumes on U.S. 58 have remained relatively consistent since 2003.

U.S. 25E near Salisbury Avenue in Middlesboro, Kentucky had an average annual daily traffic of 25,226 vehicles per day in 2004 (Kentucky Transportation Cabinet 2006). Average annual daily traffic on U.S. 25E to the north of Middlesboro was 17,252 vehicles per day in 2004. To the south of U.S. 58,

U.S. 25E had an average annual daily traffic of 22,671 in 2005 (Tennessee Department of Transportation 2006). In the tunnel, the average annual daily traffic in 2005 was 32,199 vehicles per day (NPS 2006a). To the south of Tennessee S.R. 63, U.S. 25E had an average annual daily traffic of 16,875 in 2005. U.S. 25E was operating at level of service "C" in the tunnel, but the remainder of U.S. 25E was operating at level of service "B." The 2005 traffic counts in Tennessee showed an increase of approximately 1,200 to 1,400 vehicles per day from 2003 traffic counts. Historic traffic counts were not available at the count stations in Kentucky, but 2002 and 2003 traffic counts at nearby locations were slightly lower than the 2004 counts.

S.R. 988 in the park had an average daily traffic of 285 vehicles per day entering the park in 2005 (NPS 2006a). Assuming an even split for outbound traffic, the two-way average daily traffic on this facility was 570 vehicles per day. During the month of March 2005, traffic peaked on this roadway, but only averaged approximately 936 vehicles per day using the same assumption. Traffic operated at level of service "A" on this facility during 2005, including the peak month.

Pinnacle Road had an average daily traffic of 120 vehicles per day entering the park in 2005 (NPS 2006a). Assuming an even split for outbound traffic, the two-way average daily traffic on this facility was 240 vehicles per day. During the month of May, 2005, traffic peaked on this roadway, but only averaged approximately 840 vehicles per day using the same assumption. Traffic operated at level of service "A" on this facility during 2005, including the peak month.

From 2000 to 2005, annual traffic accidents in the park ranged from a low of 23 accidents in 2003 to a high of 59 accidents in 2004 (NPS, 2006e). Most of these accidents occurred along the 2.5-mile section of U.S, 25E located within the park boundaries. During 2005, 33 of 41 accidents that occurred in the park were on U.S. 25E. The accident rate of 112.9 accidents per 100 million vehicle miles of travel was 24 percent higher than the statewide rate of 91 accidents per 100 million vehicle miles of travel for similar major arterial roadway facilities in 2005. In addition, there was one fatality reported during 2005 for this segment of U.S. 25E. This equates to 3.4 fatalities per 100 million vehicle miles of travel, or 131 percent over the statewide rate of 1.47 fatalities per 100 million vehicle miles of travel for similar major arterial roadway facilities. Over the last ten years, this section of U.S. 25E experienced accidents that were 15 percent higher than the average accident rate for a major arterial roadway and experienced fatalities at a 33 percent lower rate than average for a major arterial roadway. Prior to construction of the Cumberland Gap tunnel, there were three to five deaths each year on "Massacre Mountain," the section of U.S. 25E that was replaced by the tunnel.

From 1989 to 2006, most of the accidents in the park occurred during the summer months. However, November experienced the third highest frequency of accidents during this period.

The park has over 70 miles of hiking trails. Distances for the trails range from a one-quarter mile loop trail to the 21-mile Ridge Trail. Some of the trails allow equestrian use as well as hikers, and several also allow mountain bikes. The Wilderness Road Trail that provides access through the Gap has been restored since U.S. 25E was relocated. A 2-mile fitness trail is located near the Visitor Center. Approximately 100 people from the Middlesboro area come each day to use the fitness trail. A trail connecting Breaks Interstate Park with Pine Mountain State Park and Cumberland Gap National Historical Park is in the planning stages. It would connect with the park trail system.

A greenway that begins in Harrogate, to the south of Lincoln Memorial University, and follows U.S. 25E to the north into Cumberland Gap, Tennessee, was constructed on an abandoned railroad bed. This facility connects with the park trails near the Daniel Boone Visitor Contact Center. The Tennessee Cumberland Trail is planned to connect the park to Chattanooga.

Several of the trails cannot be accessed without crossing privately owned property. The Chadwell Gap Trailhead is located on private property approximately 3/8 mile from Virginia Route 688. This trail has been closed due to lack of parking. The Shillalah Creek Road — access to Hensley Settlement from Kentucky State Route 217 — is located on private property. The road crosses the property of several landowners over its 5-mile length. One landowner has not provided the park with a written easement.

Although all-terrain vehicles are prohibited from the park, visitors often use these vehicles on and off formal trails and in wooded areas. Most of this unauthorized use takes place in wilderness areas of the park, particularly on the more remote east end of the park. In 2005, ten citations were issued for unauthorized all-terrain vehicle use in the park (NPS 2006c). Citations issued in 2005 were considerably higher than previous years due to the discovery of an unauthorized trail that was being used by all-terrain vehicles from private and state lands to the White Rocks area in the southeast portion of the park. Rangers patrolling that trail led to the additional citations. Unauthorized all-terrain vehicle use is also a problem on Bannerfield Road in Tiprell, Shillalah Road, and Brush Mountain Road. Vegetation is damaged by unauthorized ATV use due to riding off trails and also illegal camping. Riders occasionally travel through the Hensley Settlement, disrupting the historic ambiance.

There are a number of parking lots in the park, as shown in Table 15.

Table 15. Parking Lot Location and Number of Spaces for Cars, Handicapped Access, and Bus/Recreational Vehicles

Parking Facility	Automobile	Handicapped	Bus or Recreational Vehicle
Visitor Center	130	5	16
Daniel Boone Visitor Contact Center	55	3	8
Iron Furnace	12	2	2
Entrance road to Wilderness Road campground	24	1	0
Picnic area near Wilderness Road campground	40	3	0
Park headquarter visitor parking	12	0	0
Park headquarter employee parking	13	0	0
Park headquarter picnic area	16	1	0
Thomas Walker	51	4	7
Picnic area along Pinnacle Overlook Road	4	1	0
Pinnacle Overlook	73	3	0

Parking at some of the trailheads that border the park is limited or non-existent. As mentioned, the Chadwell Gap trail head was closed due to lack of parking at the trail head. The Chadwell Gap trail provided the most direct route to the Hensley Settlement from Virginia. No easement is provided to allow access to the trailhead, and no parking is available. There is also no parking available at the Shillalah Creek trail head for persons who want to access Hensley Settlement from the Kentucky side by hiking, biking, or horseback.

Norfolk Southern has a railroad track that traverses the park using a tunnel located between Cumberland Gap, Tennessee and Middlesboro, Kentucky. This tunnel is part of a mainline rail line that operates between Middlesboro and Knoxville, Tennessee. The track generally carries two trains per day with 50-70 rail cars, and primarily transports coal (Norfolk Southern 2006).

The Middlesboro Bell County Airport offers a variety of services including 24 hour, 7 days a week self service fuel, mechanics, aircraft hanger storage, aviation weather services, flight instruction, courtesy car, and a 3650 foot asphalt runway with taxiway and apron area (Commonwealth of Kentucky 2007).

PARK OPERATIONS

In 1940, Congress authorized the Cumberland Gap National Historical Park for preservation of historically important "land, structures, and other properties . . . as a public park." The establishing legislation specified a number of associated natural and scenic features also be included as part of the park. The park's purpose is to preserve and interpret these historic resources and associated natural features for the benefit and inspiration of the people. To achieve this purpose, the Cumberland Gap National Historical Park employs approximately 54 full time personnel and 22 temporary personnel to manage and operate the nearly 25,000 acre park. The number of employees in each department is shown in Table 16.

Table 16. Cumberland Gap National Historical Park Employment, 2006

Department	No. of Permanent Employees	No. of Temporary Employees
Administration / Management	7	1
Resource Management	3	4
Interpretation	4	7
Ranger Activities	8	0
Fire Use Module	8	0
Maintenance	20	10
Total	50	22

Temporary workers in the Interpretation Division are employed from May 1 to October 31 and the temporary Maintenance Division workers are employed from March 1 to September 30. In addition, the park receives assistance from a stable of talented volunteers. During 2005, 154 volunteers contributed 16,303 hours of their time to the park. This is equivalent to nearly eight additional full time employees. Approximately 36 percent of the volunteer hours were spent on trail maintenance, 25 percent was spent on campground host duties, and 21 percent was spent on resource management activities. In addition, approximately 18 percent of the volunteer hours were spent on interpretive activities.

The park has two non-profit organizations that operate shops in the visitor center that sell educational, interpretive, and traditional Appalachian craft items to the public. The Eastern National Bookstore and the Southern Highland Craft Guild operate under cooperative agreements with the NPS.

There are no current concessions in the park. Tours to Hensley Settlement previously operated by the concession Wilderness Road Tours are now operated by the NPS. The Wilderness Road Campground is also operated by the NPS.

Emergency Response

Emergency medical services are provided by Bell County Emergency Medical Services, Harlan County Emergency and Rescue Squad, Inc. (a non-profit corporation), Claiborne County Rescue Squad, and Lee County Rescue Squad. These agencies and organizations also provide emergency services within the park. Park rangers are First Responder Emergency Medical Service qualified, and most of the law enforcement rangers are EMT-B (Basic Emergency Medical Technician) qualified. Law enforcement rangers perform first response medical assistance, but usually give control to local emergency medical service personnel when they arrive (NPS 2006f).

Fire Protection

All local firefighting agencies will respond to fires within their jurisdiction, including fires within park boundaries. NPS law enforcement rangers serving Cumberland Gap National Historical Park are trained in fighting wildfires, but are not trained in fighting structural fires. However, law enforcement rangers would be involved in any firefighting that occurred within park boundaries.

Law Enforcement

Law enforcement in unincorporated Bell County is provided by the Bell County Sheriff's Office. The Cities of Middlesboro and Pineville are each served by their own police department. Law enforcement agencies in Harlan County include the Harlan County Sheriff and police departments in the communities of Harlan, Loyall, Cumberland, and Evert. In addition, Post 10 of the Kentucky State Police is located in Harlan and serves the region. These agencies have concurrent jurisdiction; i.e., each state or county agency has jurisdiction in their respective locale within park boundaries.

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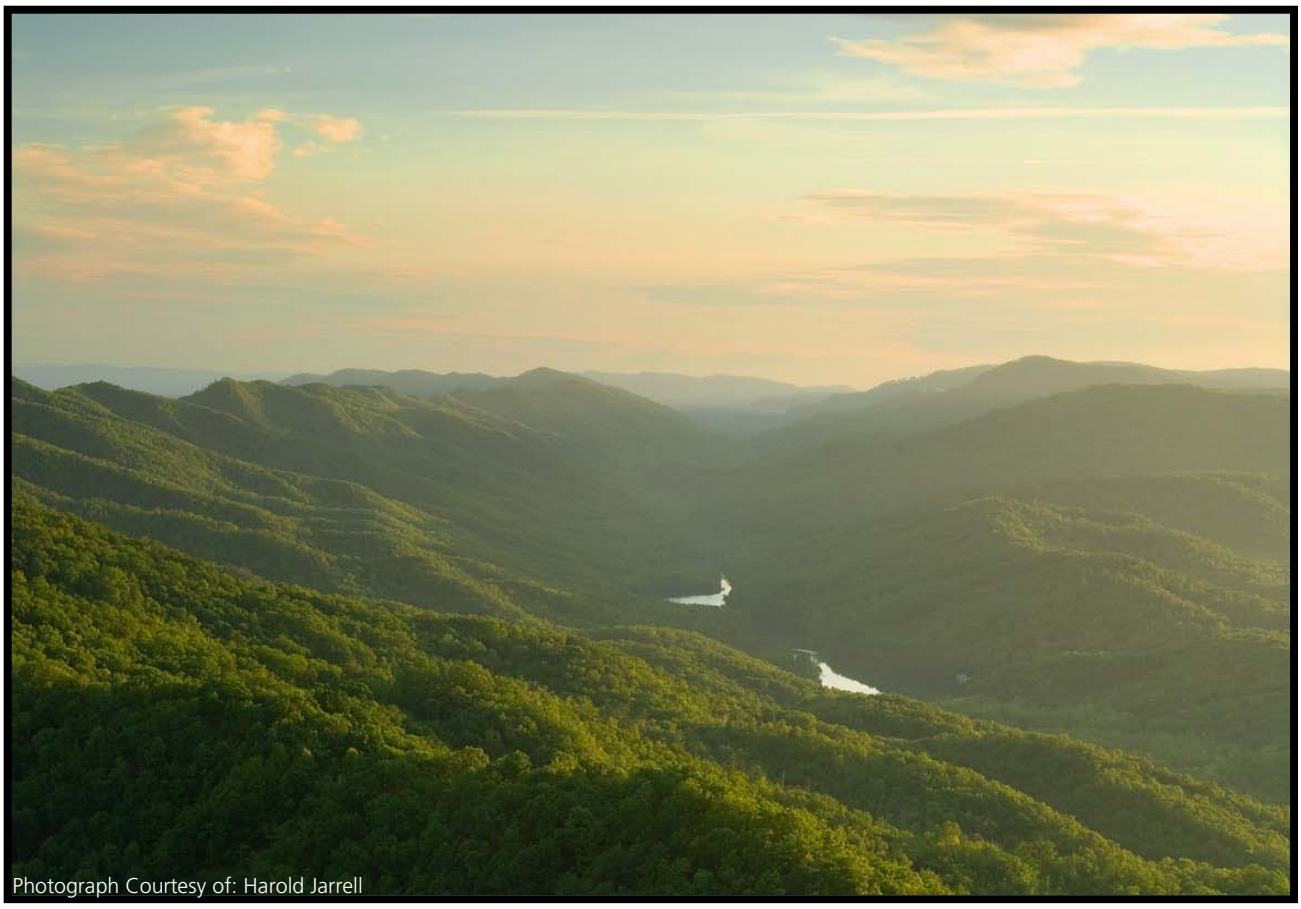
Chapter 4
ENVIRONMENTAL CONSEQUENCES



Vista from the Pinnacle

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CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

The National Environmental Policy Act (42 U.S. Code 4321, et seq.) mandates that environmental impact statements disclose the environmental impacts of proposed federal actions. In addition the proposed federal action is also an undertaking under Section 106 of the National Historic Preservation Act (16 U.S. Code, 470f). In this case the proposed federal action is the implementation of the general management plan for Cumberland Gap National Historical Park. This chapter provides an analysis of the impacts that could result from implementing the management alternatives, as described in Chapter 2, on natural resources, cultural resources, the socioeconomic environment, and other impact topics. This general management plan establishes management objectives and implementation actions needed to manage Cumberland Gap National Historical Park for the next 20 years. Therefore, the analysis period of this environmental impact statement is 20 years.

The alternatives provide broad management direction for the park. Because of the general and conceptual nature of the alternatives, the potential consequences of implementing an alternative can only be analyzed in general terms. Thus, this general management plan/environmental impact statement should be considered a programmatic analysis. Prior to undertaking specific actions as a result of this general management plan, appropriate detailed environmental and cultural compliance documentation will be prepared in accordance with the National Environmental Policy Act, the National Historic Preservation Act and other legal and policy requirements. The public will have opportunity to review and comment during the implementation phase as well.

Specific designs, layouts, footprints, and other individual project features are addressed separately during future implementation. Management zones presented in this general management plan are established to provide a set of appropriate activities and facilities for decision-making purposes. The fact that a particular zone may allow for certain activities or types of facilities does not mean that those facilities would be developed in that zone, nor does it mean that such facilities would be allowed to cover that entire zone. For example, the Developed Zone indicates that visitor services are available in terms of information, comfort stations, access via roads and trails, contact stations, and other facilities. However, it does not imply that the entire zone would be developed, but rather that the general size of the Developed Zone varies across alternatives and, therefore, the potential for the types of facilities and activities and related impacts associated with that alternative vary as well.

Included in Chapter 4 is a summary of the laws and policies relevant to addressing environmental consequences, definitions of impact thresholds (for example, negligible, minor, moderate, and major), methods used to analyze impacts, and the analysis methods used for determining cumulative effects and impairment. Impact topics presented in this chapter and the organization of the topics correspond to the discussion contained in Chapter 3, "Affected Environment."

SUMMARY OF LAWS AND POLICIES

Four overarching environmental protection laws and policies guide the actions of the NPS in the management of the parks and their resources: the NPS Organic Act of 1916, the National Environmental Policy Act and its implementing regulations, the National Historic Preservation Act and its implementing regulations, and the Omnibus Management Act. For a complete discussion of

these and other guiding regulations, refer to Chapter 1 as well as Appendix B. These guiding regulations are described in brief below.

The *Organic Act of 1916* (16 U.S. Code, §1) commits the NPS to making informed decisions that perpetuate the conservation and protection of park resources unimpaired for the benefit and enjoyment of future generations.

The *National Environmental Policy Act of 1969* is implemented through the Council on Environmental Quality regulations (40 Code of Federal Regulations 1500-1508). NPS procedures for compliance with these regulations are detailed in Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making handbook (NPS 2001b).

The *1966 National Historic Preservation Act, Section 106,* is implemented through the Advisory Council on Historic Preservation's regulations (36 Code of Federal Regulations 800). These regulations require that, as a federal agency, the NPS must assume responsibility for cultural resources within the parks and must take into account the effects of NPS undertakings on these historic properties (e.g., cultural resources eligible for or listed on the National Register of Historic Places). NPS procedures for compliance with these regulations are outlined in *Director's Orders 28 and 28A, Cultural Resource Management* and *NPS Management Policies*.

The *Omnibus Management Act* (16 U.S. Code 5901, et seq.) underscores the National Environmental Policy Act in that both are fundamental to park management decisions. Both acts provide direction for connecting resource management decisions to the analysis of impacts and communicating the impacts of these decisions to the public, using appropriate technical and scientific information. Both acts also recognize that such data may not be readily available, and they provide options for resource impact analysis should this be the case. Section 4.5 of *Director's Order 12* adds to this guidance by stating, "When it is not possible to modify alternatives to eliminate an activity with unknown or uncertain potential impacts, and such information is essential to making a well-reasoned decision, NPS will follow the provisions of the Council on Environmental Quality regulation (40 Code of Federal Regulations 1502.22)." If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency is directed to include the information in the environmental impact statement. If the relevant information cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency is directed to include the following within the environmental impact statement:

- A statement that such information is incomplete or unavailable;
- A statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment;
- A summary of existing credible scientific evidence relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment; and
- The agency's evaluation of such impacts based on theoretical approaches or research methods generally accepted in the scientific community.

The term "reasonably foreseeable" includes impacts that have catastrophic consequences, even if their probability of occurrence is low, provided that analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason. Collectively, these guiding regulations provide a framework and process for evaluating the impacts of the alternatives proposed in the general management plan / environmental impact statement.

IMPACT ASSESSMENT METHODS

The NPS based the impact analysis and the conclusions largely on the review of existing scientific literature and studies; information provided by experts in the NPS, other agencies, universities, and the public; and professional judgment. This method of analyzing impacts is further explained below. It is important to remember that impacts have been assessed assuming mitigating measures have been implemented to minimize or avoid impacts. However, any reduction in intensity of impact from mitigation is an estimate of the effectiveness of mitigation *only* under the National Environmental Policy Act. The level of effect as defined by Section 106 is *not* similarly reduced, because cultural resources are nonrenewable and adverse effects that consume, diminish, or destroy the original historic materials or form, will result in a loss in the integrity of the resource that can never be recovered. Therefore, even if actions determined to have an adverse effect under Section 106 may be mitigated, the effect remains adverse.

A brief description of relevant components of existing conditions is presented for each impact topic in Chapter 3. This information is the basis for determining the effects of implementing each alternative. The impact analyses involved the following steps:

- Defining the issues of concern, based on scoping;
- Identifying the geographic area that could be affected;
- Defining the resources within the area that could be affected;
- Identifying the effects caused by the management alternative, comparing these to Alternative A, No Action, and determining the relative change in resource conditions;
- Director's Order 12, Conservation Planning, Environmental Impact Analysis, and Decision Making, presents an approach to identifying the duration (short- or long-term), type (adverse or beneficial), and intensity or magnitude (e.g., negligible, minor, moderate, or major) of the impact(s), and that approach has been used in this document;
- Defining whether the effect would be beneficial or adverse;
- Defining the level of intensity of the effect as negligible, minor, moderate, or major. Impact topic-specific thresholds for each of these intensities are provided in each impact topic method section. Threshold values were developed based on federal and state standards and consultation with NPS and other agency resource experts. Because definitions of intensity vary by impact topic, intensity definitions are provided separately for each impact topic analyzed in this document;
- Defining the duration of the effect as either short-term or long-term. This is defined in the method for each impact topic. Where duration is not noted in the impact analysis, it is considered long-term;
- Defining the area affected by the alternative, such as the entire park (park-wide), or specific habitats within the park. Certain types of effects, such as socioeconomic, can occur outside the park. The area of effect is defined by impact topic;
- Determining the cumulative effects by evaluating the effect in conjunction with the past, present, or reasonably foreseeable future actions for Cumberland Gap National Historical Park and the region. Additional detail regarding the method for determining cumulative effects is provided in sections that follow;
- Determining whether impairment would occur to resources and values considered necessary and appropriate to fulfill the purposes of Cumberland Gap National Historical Park. Additional detail regarding the method for analyzing impairment is provided in the sections that follow.

Estimates of impact or effect on a historic property listed on or eligible to be listed on the National Register was conducted in accordance with 36 Code of Federal Regulations 800. Effects on archeological resources, ethnographic resources, historic buildings and structures, and cultural landscapes were identified and evaluated using the methods further defined under the Cultural Resources impact topic. Both National Environmental Policy Act and Section 106 of the National Historic Preservation Act requirements for analysis are addressed.

CUMULATIVE IMPACT ANALYSIS

The Council on Environmental Quality (1978) regulations for implementing the National Environmental Policy Act require assessment of cumulative impacts in the decision-making process for federal actions (40 Code of Federal Regulations 1508.7 and 36 Code of Federal Regulations 800). Cumulative impacts are defined as "incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other action." Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

Cumulative impacts were determined by combining the impacts of each management alternative with known past, present, and reasonably foreseeable future actions. Other actions that have the potential to have a cumulative effect in conjunction with measures that would be implemented in this general management plan were identified in Chapter 1 under the "Relationship of Other Planning Efforts to This General Management Plan" section. Cumulative impacts are considered for all management alternatives, including the no action alternative.

In addition to specific agency actions and programs, other activities would continue within the park or in the region that would cumulatively impact resources. These would include impacts related to land development activities in the tri-state area and increases in visitation, population, and employment. Projects and actions that could potentially affect resources at the park are listed below. Appendix I provides more detailed summaries of each of these actions.

Past Actions

The time period included in the cumulative effects analysis stretches from the 1880s until early 2007. For cultural resource impact topics, the time period for this analysis is from the 1700s to the present and is described separately in that section. The following is a list of past actions:

- Little Yellow Creek dammed in the 1880s to become Fern Lake
- Fern Lake Watershed Declared Unsuitable for Coal Mining (Federal Register: September 23, 1996)
- Fern Lake Watershed Acquisition
- Recommended Wilderness (Potential and Recommended) is designated (1978 Cumberland Gap National Historical Park Master Plan)
- Tunnel to improve highway safety and to allow completion of the Wilderness Road Restoration Project
- Construction of Daniel Boone Visitor Information Center in 2004
- Hensley Settlement Restoration
- Leasing of Civic Park and Renovation

- Rehabilitation of Main Visitor Center
- Wilderness Road Campground Improvements
- Bearproof Facilities for Backcountry Campsites
- Restoration of Gap Cave
- Establishment of Nearby State Parks
- Multi-laning of U.S. 25E Between I-81 and I-75 (including safety improvements)
- Bartlett Park Improvements
- Middlesboro Bell County Airport

Present and Future Actions

- Continued management of Recommended Wilderness in accordance with Wilderness Act and NPS policies.
- Continued Park Maintenance
- Acquisition of Fern Lake and surrounding area
- Winchester to Cumberland Gap Trail, following the Great Wagon Road/Wilderness Trail
- T.J. Asher Industrial Park and Airport
- Pine Mountain Historical Trail
- Construction of a composting toilet at Fern Lake
- Park resource inventories, guides, assessments and reports (including archeological, landscape, baseline, and resource stewardship strategy)

The cumulative effects of these actions are defined according to their relationship to each impact topic. To avoid repetition of this list in the cumulative impacts sections of the general management plan, general discussions of the cumulative effects for each impact topic are provided.

IMPAIRMENT ANALYSIS

In addition to determining the environmental consequences of implementing the preferred alternative and the other alternatives, NPS *Management Policies 2006* (section 1.4) requires analysis of potential effects to determine whether or not proposed actions would impair Cumberland Gap National Historical Park's resources and values.

The fundamental purpose of the National Park System—established by the Organic Act and reaffirmed by the General Authorities Act, as amended — begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts to park resources and values. However, the laws do give the NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of the park, so long as the impact does not constitute impairment of the affected resources and values.

The fundamental purpose of all parks also includes providing for the enjoyment of park resources and values by the people of the United States. The enjoyment contemplated by the statute is broad; it is the enjoyment of all the people of the United States and includes enjoyment both by people who visit parks and by those who appreciate them from afar. It also includes deriving benefit

(including scientific knowledge) and inspiration from parks, as well as other forms of enjoyment and inspiration.

Congress, recognizing that the enjoyment by future generations of the national parks can be ensured only if the superb quality of park resources and values is left unimpaired, has provided that when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant. This is how courts have consistently interpreted the Organic Act (NPS 2006a).

The impairment, prohibited by the Organic Act and the General Authorities Act, is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of Cumberland Gap National Historical Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values (NPS *Management Policies 2006,* section 1.4.5). An impact on any park resource or value may constitute impairment. "An impact would be more probable to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Cumberland Gap National Historical Park; or
- Key to the natural or cultural integrity of Cumberland Gap National Historical Park or to opportunities for enjoyment of the park; or
- Identified in Cumberland Gap National Historical Park's general management plan or other relevant NPS planning documents as being of significance."

Impairment may result from NPS administrative activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the Cumberland Gap National Historical Park. Impairment may also result from sources for activities outside the park (NPS 2006f).

A determination on impairment is made in the conclusion section for each impact topic related to Cumberland Gap National Historical Park's resources and values. An evaluation of impairment is not required for topics related to the socioeconomic environment, visitor use and experience (unless the impact is resource based), transportation, NPS operations, concession operations and commercial services, or public health and safety since these topics are not considered park resources.

NATURAL RESOURCES

This section provides a summary of major characteristics of the natural resources in the park. This includes geological resources (cliffs, caves, and karst), soils, water quality, fisheries / aquatic resources, wetlands, vegetation—native plant communities, and species of special concern.

GEOLOGICAL – CLIFFS, CAVES, AND KARST

Regulations and Policies

Regulations and policies that guide NPS actions with respect to cliffs, caves, and karst are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

This impact topic is included to address planning team concerns regarding possible effects of the increased access on cliff, cave, and karst resources and also to address the effects of increased levels of

education, outreach and partnering with caving groups. Effects on cliff, cave, and karst resources were addressed by identifying the specific types of activities proposed under each alternative and by making a qualitative estimate of the potential effects resulting from physical disturbance of the cliff, caves, and karst resources resulting from visitor use.

The NPS would prepare site-specific environmental assessments for new construction projects in the park, where impacts were anticipated. The environmental assessment would address the potential effects of a proposed action on cliff, cave, and karst resources, as appropriate. Best management practices would be employed to minimize potentially adverse effects on these resources.

Impact thresholds were used to estimate the intensity of each estimated effect on cliff, cave, and karst resources. Thresholds for this impact topic are presented in Table 17.

Table 17. Impact Thresholds for Geological – Cliff, Cave, and Karst Resources

Negligible: No changes would occur, or else changes in cave formations, cliffs, or karst features would be below or at the level of detection.
Minor: Changes in cave formations, cliffs, or karst features may be measurable. No resource protection measures would be necessary.
Moderate: Changes in cave formations, cliffs, or karst features would be visible and measurable. Cliffs would be physically and visibly altered. Karst features would be physically altered. Cave formations would be affected by deterioration or changed depositional patterns. Resource protection measures for these effects would be necessary, and the measures would likely be successful.
Major: Changes in cave formations, cliffs, or karst features would be visible and measurable. Cliffs would be physically and visibly altered. Karst features would be physically altered. Cave formations would be affected by deterioration or changed depositional patterns. Resource protection measures for these effects would be necessary and the measures could not be guaranteed.
Duration: Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

Impacts of Alternative A

Under Alternative A, cliff, cave, and karst resources would continue to be managed as they are at the present time. Under Alternative A, the 24 cave features in the park would continue to be closely managed. Gap Cave would be managed under the Cave Management Plan. Informal partnering with regional caving groups and surveys of Gap Cave for endangered species by the U.S. Fish and Wildlife Service and authorized investigators from colleges and universities in the region, would continue to be conducted. Results of these surveys and studies would benefit management by providing additional information on cave resources. Guided tours of Gap Cave would also continue to be provided and closely managed under Alternative A, and there would not be an increase in the number of tours given by the park. Effects of touching and lint from clothing on cave formations and effects of artificial lights (flashlights) would continue to occur, and would be minimized by limiting the number of tours given each year and by use of flashlights only in the cave, as specified by guidance provided in the Cave Management Plan. Projected increases in visitation under Alternative A would, therefore, not have associated adverse effects on cave resources.

Under Alternative A, rock climbing would continue to be prohibited in the park unless authorized under a Special Use Permit such as for endangered species research by qualified investigators. This type of research is conducted relatively infrequently and according to high standards for resource protection. These surveys would continue to improve the knowledge base needed for protection and

management of protected plants. The research program would have beneficial effects on cliff resources.

With the exception of several sinkholes, karst areas in the park are primarily underground and would not be affected by increased levels of visitation projected to occur under Alternative A. Above-ground sinkholes occur in the park, but these are located in remote areas and are not likely to be affected by increased visitation under Alternative A. Overall, the impacts of management actions taken under Alternative A would be **short- and long-term, negligible adverse effects** on cliff, cave, and karst resources.

Cumulative Impacts

Past actions affecting cave resources have included the restoration of Gap Cave and management of the cave under the Gap Cave Management Plan. This has benefited cave resources by restoring previously degraded habitat, and by preservation, protection of cave formations and cave life, and proper management of visitor use. Protection measures have been implemented for the federally listed Indiana bat and potentially, the gray bat and other sensitive species. Informal partnerships with caving organizations have also resulted in expansion of scientific knowledge regarding cave life, and have resulted in beneficial effects on these resources and an improved ability to manage cave resources. Guided tours would continue to be given in Gap Cave, with a potential for cumulative effects over time related to lint build up, use of lights, and disturbance of cave life. However, these tours would be carefully managed under the Gap Cave Management Plan, which would minimize potentially adverse cumulative effects.

None of the future construction projects proposed for areas inside or outside the park would affect cliff, cave, and karst since they would not be constructed in the vicinity of park resources.

Surveys of the protected plants that live on the cliff systems in the park have been completed and management efforts to protect sensitive cliff species will continue into the future, providing long-term, beneficial effects.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting cliffs, caves, and karst resources are combined with actions under Alternative A, the resulting overall cumulative effects on cliff, cave, and karst resources are estimated to be **long- and short-term, negligible and adverse**.

Conclusions

The overall effect of management actions taken under Alternative A on cliffs, caves, and karst resources would be **long- and short-term, negligible and adverse**. No new construction activities or projects would occur in the park or in the surrounding area that would adversely affect these resources. No change in the present conservative and highly protective management of these resources would occur. Research programs on cliff, cave, and karst resources would continue to occur, providing additional information needed for successful resource management. These management actions would have long-term, major, beneficial effects on cliff, cave, and karst resources.

Past actions associated with caves, cliffs, and karst resources have focused on cave restoration, guided cave tours, and scientific research on cliff faces for protected species; these have resulted in beneficial effects. Under Alternative A, these activities would continue in the future. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting cliff, cave, and karst resources are combined with actions under Alternative A, the resulting overall cumulative effects are estimated to be **long- and short-term, negligible, and adverse**.

There would be no impairment of cliffs, caves, and karst resources or values as a result of park actions taken under Alternative A.

Impacts of Alternative B

Under Alternative B, guided tours of Gap Cave and scientific research on cliffs and caves would continue to be sponsored and managed by the park at levels similar to Alternative A. Under Alternative B, however, recreational rock climbing and rappelling would be defined as an appropriate activity, pending further study and consultation with regard to public health and safety, threatened and endangered species, resource sensitivity, or visitor experience. Rock climbing has the potential to cause physical damage to cliffs as a result of the use of climbing equipment and increased use of trails in the vicinities of cliffs. Environmental Assessments would also be required to determine suitable alternatives for these activities and the potential for adverse effects on cliff, cave, and karst resources. Measures to avoid, minimize or reduce potentially adverse effects on these resources would be taken during the assessment phases of the proposed activity. Overall, Alternative B is estimated to have **short- and long-term, negligible to minor and adverse effects** on cliff, cave, and karst resources in the park.

Cumulative Impacts

Cumulative effects of Alternative B on caves would be similar to Alternative A, since there would be no increase in caving activities, partnering programs, or activities affecting cliffs or karst areas. Rock climbing and rappelling activity in the Natural Zone would be possible pending results of further study. Other resource inventories and studies would occur over the long-term. Results of other studies would provide additional information to aid in the protection of resources as well as provide for rewarding visitor experiences.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting cliff, cave, and karst resources are combined with actions under Alternative B, the resulting overall cumulative effects are estimated to be **long- and short-term, negligible to minor, and adverse**.

Conclusions

Management actions proposed under Alternative B would not result in increased levels of visitor activities in Gap Cave or other cave features, cliffs, or karst areas in the park as compared with Alternative A. Alternative B could, however, result in increased use of cliffs for rock climbing under carefully managed Special Use Permits. Increased use of these areas could result in the disturbance of soil and vegetation along access trails and cliff areas. Environmental Assessments would be conducted to assess alternatives and assure avoidance and minimization of potentially adverse effects. Alternative B is estimated to have an overall **long-term, negligible to minor adverse effect** on cliff, cave, and karst resources in the park.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting cliff, cave, and karst resources are combined with actions under Alternative B, the resulting overall cumulative effects are estimated to be **long- and short-term, negligible to minor, and adverse**.

There would be no impairment of cliffs, caves and karst resources or values as a result of park actions taken under Alternative B.

Impacts of Alternative C

The effects of management actions proposed under Alternative C on cliff, cave, and karst resources would be similar to Alternative B, except that Alternative C would feature a formalized caving partnering program, to include creation of a wild caving program. The appropriate compliance would be completed before expansion of Gap Cave tours. This would result in an increased amount of research on caves and an associated improved ability to manage caves, but would also result in potential increased levels of visitor use and potential effects on cave resources. The park would continue to carefully manage these types of activities under the Cave Management Plan to minimize the potential for these effects to occur. The formalized caving program would also include increased levels of research in park caves. This would lead to improved information needed to properly manage caves, and would help minimize the potentially adverse effects of increased visitor use over time.

Rock climbing and rappelling may be appropriate pending further study. Effects of this activity would be similar to those resulting from implementation of Alternative B. Activities associated with cliff and karst areas would be similar to Alternative B. Effects of Alternative C on cliff and karst resources would, therefore, be similar to Alternative B. Overall, Alternative C would have **long- and short-term, negligible to minor and adverse** effects on cliff, cave, and karst resources in the park.

Cumulative Impacts

Cumulative effects of Alternative C on caves would be similar to Alternative B.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting cliff, cave, and karst resources are combined with actions under Alternative C, the resulting overall cumulative effects are estimated to be **long- and short-term, negligible to minor and adverse**.

Conclusions

Alternative C would feature a formalized partnering program with caving groups and increased levels of research on cave resources. Alternative C would also feature creation of a wild caving program for Gap Cave and potentially rock climbing and rappelling pending further study. Alternative C is estimated to have **long-term, negligible to minor and adverse effects** on cliff, cave, and karst resources in the park.

Cumulative effects of Alternative C on caves would be similar to Alternative B. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting cliff, cave, and karst resources are combined with actions under Alternative C, the resulting overall cumulative effects are estimated to be **long- and short-term, negligible to minor and adverse**.

There would be no impairment of cliff, cave, and karst resources or values as a result of park actions taken under Alternative C.

SOILS

Regulations and Policies

Regulations and policies that guide NPS actions with respect to soils are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

This impact topic is included to address planning team concerns regarding possible effects of increased access on soils in areas where new construction activity would occur (the majority of new construction would occur in the Developed Zone). Effects on soils were addressed by identifying the types of construction projects and actions proposed under each alternative and making a qualitative estimate of the potential effects on soils resulting from construction (excavation, clearing) and operation (soil erosion caused by runoff from pervious and impervious surfaces). The alternatives call for seven new minor facilities under Alternative B and 11 new minor facilities under Alternative C. In addition to this specific type of assessment, a generalized estimate of effects on soils was also made based on the types of facilities and visitor use in zones. The more generalized type of analysis is based on a qualitative comparison of the relative amount of area that could be disturbed by construction and operation of new facilities in each zone. Depending on the zone, new facilities could include, for example, roads, trails, parking lots, utilities, buildings, and smaller facilities such as kiosks, shelters and signs. The types of facilities appropriate for each zone are identified in Table 6 of Chapter 2, "Alternatives." It is assumed that a greater variety and number of facilities would be constructed and operated in the Developed Zone, as compared to the other zones, and that effects on soils are proportional to the amount of physical disturbance and runoff during storm events. It is also assumed that during operation, effects on soils would be related to runoff from paved areas during storm events or from increase trail use by visitors (horse, hiker).

The NPS would prepare a site-specific environmental assessment for park actions, including new construction projects. The environmental assessment will address the potential effects of a proposed project on soils. Best management practices would be employed to minimize potentially adverse effects on soils.

Impact thresholds were used to estimate the intensity of the estimated effects on soils. Thresholds for this impact topic are presented in Table 18.

Table 18. Impact Thresholds for Soils

Negligible: Soils would not be affected, or the effects on soils would be below or at levels of detection. There would be no discernable effect on the rate of soil erosion and/or the ability of the soil to support native vegetation.	
Minor: The effects on soils would be detectable, but effects on soil productivity would be minimal. There would be detectable effects on the rate of soil erosion and/or the ability of the soil to support native vegetation. Mitigation may be needed to offset adverse effects and would be relatively simple to implement and would likely be successful.	
Moderate: The effect on soil productivity would be readily apparent and would result in a change to the soil character. The rate of soil erosion and/or the ability of the soil to support native vegetation would be appreciably changed. Mitigation measures would be necessary to offset adverse effects and would likely be successful.	
Major: The effect on soil productivity would be readily apparent and would substantially change the character of the soils. The actions would have a substantial, highly noticeable influence on the rate of soil erosion and/or the ability of the soil to support native vegetation. Mitigation measures to offset adverse effects would be extensively needed, and their success could not be guaranteed.	
Duration:	Long-term: Recovery of soils would take more than one year. Short-term: Recovery of soils would take less than one year.

Impairment of soils would occur if there were significant adverse effects on these resources or soils' value where conservation was (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or (3) identified as a goal in this general management plan or other NPS planning documents as being of significance.

Impacts of Alternative A

Under Alternative A, the only new proposed constructed would be a composting comfort station at Fern Lake. This project is limited in extent and would be expected to have negligible effects on soils near Fern Lake. Best management practices would be implemented during construction to minimize soil erosion. Roads, trails, a small building, and facilities currently present in the area surrounding the lake, would be left in place. Some sediment in storm water runoff from these previously disturbed or developed areas would continue to erode and reach the lake during rainfall events, but the majority of the watershed would be left intact. Water quality would resemble current conditions in the near future.

During operation of the park under Alternative A, the existing management policies and programs would be continued. These policies and programs require maintenance of soils in the park along hiking trails, the visitor center, and all other park facilities. Existing authorized trails would continue to be maintained and unauthorized trails impacts would be mitigated and managed in a manner that avoids erosion. The overall effect of Alternative A on soils is estimated to be **long- and short-term, negligible and adverse**.

Cumulative Impacts

Past actions that have affected soils in the park include the damming of Little Yellow Creek in the 1880s to become Fern Lake, declaration of the Fern Lake watershed as being unsuitable for coal mining (Federal Register: September 23, 1996), the Wilderness Road preservation project, construction of the Daniel Boone Visitor Information Center in 2004, restoration of the Hensley Settlement, renovation of the Civic Park, rehabilitation of the main visitor center, Bartlett Park improvements, Wilderness Road Campground improvements, and construction at nearby state parks (Wilderness Road State Park, Pine Mountain State Park). During construction of facilities in these areas, soils were disturbed by clearing, excavation, and site preparation activities. Best management practices were employed to minimize soil erosion during construction.

Acquisition of the Fern Lake watershed resulted in continued preservation of the watershed and prevented development or other potential soil/land disturbing activities.

Present actions in the park or surrounding area that could affect soils include the multi-laning of U.S. 25E between I-81 and I-75. Multi-laning of U.S. 25E would result in soil erosion during construction. These effects would be minimized by implementation of best management practices. The multi-laning project would also result in increased storm water runoff to creeks in the vicinity, with an increase in the potential for soil erosion. Proper highway storm water management design would help minimize these effects.

Reasonably foreseeable future construction activities that could affect soils in the park or surrounding area would include future potential construction activities at the T.J. Asher Industrial Park and Airport, Bell County Technology and Training Park and Lee County Industrial Park, and construction of the Pine Mountain Historical Trail. During construction of facilities in these areas, soils would be disturbed by clearing, excavation, and site preparation activities. In addition, soils

would be disturbed, paved, or covered, creating impervious surface conditions that could cause more storm water runoff in the future and if not properly managed, could cause soil erosion.

Acquisition of the remaining portion of the Fern Lake watershed will result in permanent preservation of the watershed.

When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting soils are combined with actions under Alternative A, the resulting overall cumulative effect would be **long- and short-term, minor and adverse**.

Conclusions

The only construction proposed under Alternative A would be the composting comfort station at Fern Lake, a minor construction project. This would have **short-term, negligible, adverse effects** on soils near Fern Lake. The acquisition of Fern Lake would preserve the majority of the Fern Lake watershed, providing continued **long-term, moderate beneficial effects** on soils in the Fern Lake Watershed. Some soil erosion would continue to occur in the park as a result of use of use of trails and runoff from impervious surfaces. The overall effect of Alternative A on soils would be **long- and short-term, negligible and adverse**. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting soils are combined with actions under Alternative A, the resulting cumulative effects would be **long- and short-term, minor and adverse**.

There would be no impairment of soil resources or values as a result of park actions proposed under Alternative A.

Impacts of Alternative B

As compared to Alternative A, Alternative B would provide for larger and more numerous Developed Zones, a greater potential for new facilities, and increased visitor access. In addition, construction of seven new minor facilities in Developed Zones at the Hensley Settlement, Fern Lake, and the Wilderness Road Campground would be constructed and would potentially affect soils (see Chapter 2 for detailed information on these projects).

Potential effects on soils during construction of new park facilities are related primarily to soil erosion that could result from storm water runoff from newly cleared areas. Construction effects would be minimized by implementation of best management practices. During operation, erosion could be caused by increased runoff from unpaved trails or from paved roads, parking lots, or roofs. Erosion could also be caused by increased visitor use of trails or other unpaved areas. For example, increased use of trails could result in inadvertent damage or adverse effects associated with soil compaction, runoff, sedimentation, and vegetation trampling or removal. Implementation of proper siting, design techniques and best management practices would minimize potentially adverse effects on soils.

The overall effect of Alternative B on soils would be **long- and short-term, minor and adverse**.

Cumulative Impacts

Cumulative effects of past, present, and reasonably foreseeable actions of Alternative B on soils would be similar to Alternative A. Seven minor facilities would be proposed for construction under Alternative B, and these would have negligible effects on soils. It is also anticipated that there would be relatively few future facilities in other parts of the park. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting soils are combined with actions under Alternative B, the resulting overall cumulative effect would be **long- and short-term, minor and adverse**.

Conclusions

Construction and operation of the seven new proposed facilities, and construction of other potential new facilities in other areas of the park under Alternative B, would have **long- and short-term, minor and adverse** effects on soils. Potentially adverse effects on soils would be minimized by implementation of best management practices.

When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting soils are combined with actions under Alternative B, the resulting overall cumulative effect would be **long- and short-term, minor and adverse**.

There would be no impairment of soil resources or values as a result of park actions under Alternative B.

Impacts of Alternative C

Compared to Alternative A, Alternative C would provide for larger and more numerous Developed Zones, greater potential for new facilities, and increased visitor access. This would increase the potential for adversely affecting soils during construction and operation of any new facilities. In addition, 11 new minor facilities in Developed Zones at the Hensley Settlement, the base of Brush Mountain, Fern Lake, and the Wilderness Road Campground would be proposed for construction. These would have a potential to affect soils in these areas (see Chapter 2 for detailed information on these projects).

Unlike any other alternative, Alternative C features increased education and outreach programs that would help educate the public on issues related to soil erosion in the park. This could also lead to increased participation in trail maintenance programs by the public or other awareness programs relating to soil conservation. This would have a beneficial effect on soils in the park.

As compared to Alternative A, Alternative C has a potential to increase soil erosion in additional areas of the park as a result of construction and operation of limited new facilities. Prior to construction of new park facilities, site-specific environmental assessments would be prepared that would assess the potential effects of alternative sites and designs on natural and cultural resources. The soil tables (Appendix C) can be used to define the effects of a given project within the Fern Lake Watershed. Implementation of proper siting, design techniques, and best management practices would minimize potentially adverse effects on soils. The overall effect of Alternative C on soils is, therefore, estimated to be **long- and short-term, minor and adverse.**

Cumulative Impacts

Past, present, and reasonably foreseeable actions of Alternative C would be similar to Alternative B, except that Alternative C would also feature a total of 11 minor construction projects. These actions would potentially cause additional adverse effects on soils. Implementation of proper siting, design techniques, and best management practices would minimize potentially adverse effects on soils. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting soils, are combined with actions in Alternative C, the resulting cumulative effects of Alternative C are estimated to be **long- and short-term, minor and adverse**.

Conclusions

The overall effect of Alternative C on soils would be **long- term, minor and adverse**. Best management practices would be employed in the design and operation of any new facilities. Increased levels of education and outreach would have **long-term, beneficial effects** on soils by informing the

public about soils erosion issues and by potentially increasing public participation in trail maintenance programs and increasing awareness.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting soils are combined with actions in Alternative C, the resulting cumulative effects of Alternative C would be **long- and short-term, minor and adverse.**

There would be no impairment of soil resources or values as a result of park actions under Alternative C.

WATER QUALITY

Regulations and Policies

Regulations and policies that guide NPS actions with respect to water quality are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

This impact topic was identified as an issue of concern during the public scoping process. Issues identified included concerns about potential effects of construction of new park facilities on water quality and use of motorized vessels and how they might affect the drinking water supply of Fern Lake. Preservation of water quality in Fern Lake and elsewhere in the park was identified as an issue.

In this section, effects on water quality were addressed by identifying the specific construction projects proposed under each alternative and by making a qualitative estimate of the potential effects on water quality resulting from soil erosion during construction (excavation, clearing) and operation of new facilities (soil erosion caused by runoff from pervious and impervious surfaces). A generalized estimate of the effects on water quality was also made based on the types of facilities and visitor use appropriate for each zone. The majority of these effects would occur in Developed Zones.

This analysis assumes that effects on water quality resulting from implementation of an alternative would be a direct result of construction and operation of park facilities. These effects would parallel the effects on soils described in the previous section. All effects on water quality are also assumed to be local in extent. It is also assumed that gasoline powered vessels would not be allowed to be used in Fern Lake.

The NPS would prepare site-specific environmental assessments for proposed new construction projects in the park. Each environmental assessment would address the potential effects of a proposed project on water quality. Best management practices would be used to minimize potentially adverse effects on water quality.

Impact thresholds were employed to estimate the intensity of each estimated effect on water quality. Thresholds for this impact topic are presented in Table 19.

Table 19. Impact Thresholds for Water Quality
Negligible: Chemical, physical, or biological changes to water quality would not be detectable and would be below or within historical or desired water quality conditions.
Minor: Chemical, physical, or biological changes would be measurable but would be below water quality standards and would be within historical or desired water quality conditions.
Moderate: Chemical, physical, or biological changes to water quality would be measurable and readily apparent, but within all water quality standards. Water quality would be altered

compared to historical baseline or desired water quality conditions. Mitigation would be necessary to offset adverse effects, and would most likely be successful.
Major: Chemical, physical, or biological changes to water quality would be readily measurable, and some water quality standards would be periodically approached, equaled, or exceeded. Water quality would be frequently altered from the historical baseline or desired water quality conditions. Extensive mitigation measures would be necessary and their success would not be assured.
Duration: Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

Impacts of Alternative A

Under Alternative A, water quality in Fern Lake would continue to be protected by the heavily forested, protected watershed. Roads, trails, a small building, and facilities currently present in the area surrounding the lake would be left in place. Some sediment in storm water runoff from these previously disturbed or developed areas would continue to erode and reach the lake during rainfall events, but the majority of the watershed would be left intact. Water quality would resemble current conditions in the near future.

The only construction proposed under Alternative A is the composting comfort station at Fern Lake, a minor construction project. This would have **short-term, negligible, adverse effects** on water quality associated with soil erosion near Fern Lake. Availability of comfort station facilities at Fern Lake would have a **long-term, minor, beneficial effect** on water quality of Fern Lake by controlling and treating wastewater. Continued protection of the Fern Lake watershed would provide long term, moderate beneficial effects to water quality.

Water quality in the park would continue to be impacted by non-point runoff from some existing unpaved trails, other unpaved surfaces, and runoff from paved, impervious surfaces in the park such as trails, roads, parking lots, and roof tops. Increased use of existing trails could result in inadvertent damage or adverse effects on water quality associated with soil compaction, runoff, sedimentation, and vegetation trampling or removal. Continuation of current management practices and use of best management practices would continue to control runoff from these sources.

Overall, Alternative A is estimated to have **short-term, negligible and adverse effects** on water quality.

Cumulative Impacts

Other then the new composting comfort station at Fern Lake, no other new facilities would be constructed in the park under Alternative A. Cumulative effects of past, present, and reasonably foreseeable future actions under Alternative A on water quality would be similar to the cumulative effects described for soils, since water quality is largely related to soil disturbance. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting water quality are combined with actions under Alternative A, the resulting overall cumulative effects are estimated to be **long- and short-term, minor and adverse**.

Conclusions

Overall, Alternative A is estimated to have **short -term, negligible and adverse** effects on water quality and would parallel the effects described for soils. In addition, under Alternative A, the high quality of water in Fern Lake would continue to be maintained since the watershed would not be disturbed.

Cumulative effects of past, present, and reasonably foreseeable future actions under Alternative A would parallel cumulative effects described for soils. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting water quality are combined with actions under Alternative A, the resulting overall cumulative effects on water quality are estimated to be **long- and short-term, minor and adverse**.

There would be no impairment of water quality or values as a result of park actions under Alternative A.

Impacts of Alternative B

Potential effects on water quality would be related to increased soil erosion during construction activities and increased volumes of storm water runoff from impervious surfaces during operation. The effects of Alternative B on water quality would, therefore, parallel effects described for soils. Implementation of proper siting, design techniques, and best management practices would minimize potentially adverse effects on water quality. Construction and operation of facilities, could potentially affect the water quality of any of the streams in the vicinity of Developed Zones. Streams that could potentially be affected include Yellow Creek, Little Yellow Creek, Gap Creek, Devils Garden Branch, Lewis Hollow Branch, Davis Branch, Sugar Run, Martins Fork Branch, Station Creek, and Shillalah Creek. Water quality in the majority of these streams is good.

Alternative B could potentially increase soil erosion and sediment loading in additional areas of the park as a result of construction and operation of limited new facilities. For example, increased use of trails and/or construction of new trails could result in inadvertent damage or adverse effects on water quality associated with soil compaction, runoff, sedimentation, and vegetation trampling or removal. However, implementation of proper siting, design techniques, and best management practices would minimize adverse effects associated with construction and storm water runoff. The overall effect of Alternative B on water quality would be **long- and short-term, minor and adverse**.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions in Alternative B would be the same as described for Alternative A, except for the addition and operation of seven new small facilities in Alternative B over the long term. Cumulative effects of past, present, and reasonably foreseeable future actions under Alternative B would also parallel cumulative effects described for soils. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting water quality are combined with actions under Alternative B, the resulting overall cumulative effects on water quality are estimated to be **long- and short-term, minor and adverse**.

Conclusions

Construction and operation of the seven new proposed facilities and other facilities in other areas of the park under Alternative B would have **long- and short-term, minor and adverse effects** on water quality. Implementation of proper siting, design techniques, and best management practices would minimize potentially adverse effects on water quality.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting water quality are combined with actions under Alternative B, the resulting cumulative effects of Alternative B would be **long- and short-term, minor and adverse**.

There would be no impairment of water quality or values as a result of park actions under Alternative B.

Impacts of Alternative C

As compared to Alternative A, Alternative C would provide for larger and more numerous Developed Zones, a greater potential for new facilities, and increased visitor access. New or enlarged Development Zones would total more than twice the area occupied by areas designated as developed under Alternative A. However, this is not to imply that the entire zone would be developed. Only limited facility development is proposed. Construction of 11 new minor facilities in Developed Zones at the Hensley Settlement, the base of Brush Mountain, Fern Lake, and the Wilderness Road Campground could be completed. These would potentially affect water quality in these areas (see Chapter 2 for detailed information on proposed facilities). Streams that could potentially be affected include Yellow Creek, Little Yellow Creek, Gap Creek, Devils Garden Branch, Lewis Hollow Branch, Davis Branch, Sugar Run, Martins Fork Branch, Station Creek, and Shillalah Creek. Water quality in the majority of these streams is good. Implementation of proper siting, design techniques, and implementation of best management practices would minimize adverse effects associated with construction and storm water runoff.

Increased use of trails and/or construction of new trails could result in inadvertent damage or adverse effects on water quality associated with soil compaction, runoff, sedimentation, and vegetation trampling or removal. However, implementation of proper siting, design techniques, and implementation of best management practices would minimize adverse effects associated with construction and storm water runoff.

Alternative C also features increased education and outreach programs that would help to further educate the public on issues related to soil erosion and water quality in the park. This would also increase awareness and provide a benefit to resource protection. Increased education and outreach programs could lead to increased participation in trail maintenance programs by the public or by other programs relating to soil conservation. This would have a **moderate, long-term beneficial effect** on water quality in the park.

Prior to construction of new park facilities, site-specific environmental assessments would be prepared that would assess the potential effects of specific sites and designs on water quality. The soil tables provided in Appendix C can be used to define the effects of a given project on soils and sediment loading of streams and water quality, depending on location.

The overall effect of Alternative C on water quality is, therefore, estimated to be **long- and short-term, minor and adverse**.

Cumulative Impacts

Cumulative effects of Alternative C on water quality would be similar to Alternative B. The only difference would be the construction and operation of additional minor facilities under Alternative C (two to three existing campsites would be modified for use by horse trailers). Construction and operation of a few minor additional new facilities within the newly established Developed Zones in the park could also occur. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting water quality are combined with actions under Alternative C, the resulting cumulative effects of Alternative C would be **long- and short-term, minor and adverse**.

Conclusions

The overall effect of Alternative C on water quality would be **long- and short-term, minor and adverse** associated with 11 minor new facilities proposed under Alternative C, and the effects of other projects on water quality would be limited. Implementation of proper siting, design techniques, and

best management practices would minimize potentially adverse effects on water quality. Increased levels of education and outreach would also have **moderate, long-term, beneficial effect** on water quality by informing the public about soil erosion and sediment loading issues, and by potentially increasing public participation in trails maintenance programs and dissemination of information on water quality.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting water quality are combined with actions under Alternative C, the resulting cumulative effects of Alternative C on water quality would be **long- and short-term, minor and adverse**.

There would be no impairment of water quality or values as a result of park actions under Alternative C.

FISHERIES/ AQUATIC RESOURCES

Regulations and Policies

Regulations and policies that guide NPS actions with respect to fisheries/aquatic resources are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

This impact topic is included to address potential effects of construction and operation of new facilities on fisheries and aquatic life, particularly at Fern Lake, but also in streams within and adjacent to the park. Potential effects of these actions are primarily related to the potential for increased soil erosion and sediment loading to water bodies during construction and operation of new facilities. Potential effects on fisheries and aquatic resources, therefore, parallel the effects on soils and water quality.

This analysis assumes that effects on fisheries/aquatic resources resulting from implementation of an alternative would be a direct result of construction and operation of park facilities. All effects on fisheries/aquatic resources are also assumed to be local in extent.

Prior to construction of new park facilities, site-specific environmental assessments would be prepared that would assess the potential effects of specific sites and designs on natural and cultural resources. The soil tables provided (Appendix C) may be used to define the effects of projects in the Fern Lake area on soils and sediment loading of streams and Fern Lake, and resulting effects on fisheries and aquatic resources. Detailed information included in Appendix F can also be used to evaluate conditions in individual streams in the vicinity of proposed projects.

Impact thresholds were used to estimate the intensity of each estimated effect on aquatic resources. Thresholds for this impact topic are presented in Table 20.

Table 20. Impact Thresholds for Aquatic Resources
Negligible: Aquatic resources and their habitats would not be affected or else the effects would be at or below the level of detection and would not be measurable or of perceptible consequence to aquatic populations.
Minor: Effects on aquatic resources or habitats would be measurable or perceptible. While the mortality of individual plants and animals might occur, the viability of aquatic populations would not be affected and the community, if left alone, would recover.

Moderate: A change in aquatic populations or habitats would occur and would be readily measurable in terms of abundance, distribution, quantity, or quality of populations. Mitigation measures would be necessary to offset adverse effects and would most likely be successful.
Major: A change in aquatic populations or habitats would occur and would be readily measurable in terms of abundance, distribution, quantity, or quality of populations. Extensive mitigation would be needed to offset adverse effects, and the success of mitigation measures could not be assured.
Duration: Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

Impacts of Alternative A

The only construction proposed under Alternative A is the composting comfort station at Fern Lake, a minor construction project. This would have **short-term, negligible, and adverse effects** on fisheries/aquatic resources associated with soil erosion in the vicinity of Fern Lake. Availability of comfort station facilities at Fern Lake would have a **long-term, minor beneficial effect** on fisheries/aquatic resources of Fern Lake by controlling and treating wastewater.

Increased use of trails, and/or construction of new trails, could occur under Alternative A. This could potentially result in inadvertent damage or adverse localized effects on fisheries/aquatic resources associated with soil compaction, runoff, sedimentation, and vegetation trampling or removal. These effects are expected to be minor, however, and would be mitigated through appropriate trail management. During operation of the park under Alternative A, existing management policies and programs for fisheries/aquatic resources would be continued. These policies and programs require maintenance of soils and minimization of sediment loading to streams in the park along hiking trails, the visitor center, and all other park facilities. During operation, roads, trails, small buildings, and facilities currently present in the area surrounding Fern Lake, would be left in place, and no other new facilities would be constructed. Soil erosion from existing facilities would be minimal and water quality would be expected to remain high, providing quality fisheries and aquatic habitat at Fern Lake.

Under Alternative A, fisheries and aquatic life in the park are expected to be maintained in good overall ecological health. The overall effect of Alternative A on fisheries/aquatic resources is estimated to be **long- and short-term, negligible and adverse**.

Cumulative Impacts

Cumulative effects of Alternative A on fisheries/aquatic resources would parallel the previously described cumulative effects on soils and water quality. Protection of the Fern Lake Watershed and continued maintenance of park facilities provide beneficial effects. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting fisheries/aquatic resources are combined with actions under Alternative A, the resulting cumulative effects of Alternative A would be **long- and short-term, minor and adverse.**

Conclusions

The effects of Alternative A on fisheries/aquatic resources would parallel the effects of construction and operation of the park on soils and water quality as described in previous subsections. The overall effects of Alternative A on fisheries/aquatic resources are estimated to be **long- and short-term, negligible and adverse**.

Cumulative effects of Alternative A would parallel the description of cumulative effects on soils and water quality. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting fisheries/aquatic resources are combined with actions under Alternative A, the resulting cumulative effects of Alternative A would be **long- and short-term, minor and adverse**.

There would be no impairment of fisheries/aquatic resources or values as a result of park actions under Alternative A.

Impacts of Alternative B

The effects of Alternative B on fisheries/aquatic resources would parallel the effects on water quality described previously, since effects on these resources are highly localized and would primarily be related to effects of soil erosion during construction and storm water runoff during operation of new park facilities. Alternative B would feature seven specific construction projects as well as more generalized plans for construction and operation of future facilities in the various zones established for the park. Implementation of proper siting, design techniques, and best management practices would minimize potentially adverse effects on water quality and fisheries/aquatic resources. The overall effect of Alternative B on fisheries/aquatic resources would be **long- and short-term, minor and adverse**.

Cumulative Impacts

Cumulative effects of Alternative B on fisheries/aquatic resources would be similar to those in Alternative A, because seven minor facilities would be constructed under Alternative B and these would have potentially localized effects on soils and sediment loading to streams and Fern Lake. It is also anticipated that there would be relatively few future facilities in other parts of the park. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting fisheries/aquatic resources are combined with actions under Alternative B, the resulting overall cumulative effect would be **long- and short-term, minor and adverse**.

Conclusions

Because few new facilities would be constructed and operated, the overall effect of Alternative B on fisheries/aquatic resources would be **long- and short-term, minor and adverse**. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting fisheries/aquatic resources are combined with actions under Alternative B, the resulting overall cumulative effect would be **long- and short-term, minor and adverse**.

There would be no impairment of fisheries/aquatic resources or values as a result of park actions under Alternative B.

Impacts of Alternative C

The effects of Alternative C on fisheries/aquatic resources would be similar to those in Alternative B, except that a total of 11 minor facilities would be constructed and operated, and education and outreach programs would be expanded. Expanded education and outreach programs would benefit fisheries/aquatic resources by enhancing visitor awareness of the value of these park aquatic resources. The overall effect of Alternative C on fisheries/aquatic resources would be **short-and long-term, minor and adverse**.

Cumulative Effects

The cumulative effects of Alternative C on fisheries/aquatic resources would be similar to those under Alternative A, except that a total of 11 minor facilities would be proposed for construction under Alternative C. Some additional new facilities could also be constructed in other parts of the park in the future. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting fisheries/aquatic resources are combined with actions under Alternative C, the resulting cumulative effects of Alternative C would be **long- and short-term, minor and adverse**.

Conclusions

Due to the limited number of new facilities anticipated in the park, the overall effect of Alternative C on fisheries/aquatic resources is, therefore, estimated to be **long- and short-term, minor and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting fisheries/aquatic resources are combined with actions under Alternative C, the resulting cumulative effects of Alternative C would be **long- and short-term, minor and adverse**. There would be no impairment of fisheries/aquatic resources or values as a result of park actions under Alternative C.

WETLANDS

Regulations and Policies

Regulations and policies that guide NPS actions with respect to wetlands are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

Wetland protection was identified as an issue since these natural resources could potentially be affected by construction and operation of new park facilities. Potential effects of the management alternatives on wetlands were estimated in two ways: (1) the locations of specific future projects were compared with available wetland maps and a conclusion was made regarding potential effects where possible for a general area; and (2) a more generalized assessment of potential effects on wetlands was completed by defining the types of activities and facilities that could be implemented in each zone and estimating the potential for effects. The National Wetlands Inventory location map was used as the basis for the impact assessment (USFWS 2007b). The majority of new facilities that could potentially affect wetlands would be constructed and operated in the Developed Zone, including the area near Fern Lake.

This analysis assumes that effects on wetlands resulting from implementation of an alternative would be a direct result of construction and operation of park facilities. All effects on wetlands are assumed to be local in extent.

In all cases, the park would adhere to section U.S. Environmental Protection Agency 404(b) (1) guidelines to avoid and minimize potentially adverse effects on wetlands. Restoration or enhancement of wetlands to offset any unavoidable losses would be taken as the last step in this process, as required. In addition, NPS guidelines for mapping and avoiding wetlands would also be followed. The NPS requirements are more restrictive than the U.S. Environmental Protection Agency 404(b) (1) guidelines.

Prior to construction of new park facilities, site-specific environmental assessments would be prepared that would assess the potential effects of specific sites and designs on wetlands. The wetland

and soil tables (Appendix E) may be used as an initial step in evaluation effects on wetlands; in addition, formal wetland delineations would be conducted for specific construction projects. Wetlands would be avoided to the maximum extent practicable, according to the requirements of *Director's Order No. 77-1: Protection of Wetlands* (NPS 2008).

Impact thresholds were used to estimate the intensity of each estimated effect on wetlands. Thresholds for this impact topic are presented in Table 21.

Table 21. Impact Thresholds for Wetlands

Negligible: Wetland habitats would not be affected or else the effects would be at or below the level of detection and would not be measurable or of perceptible consequence to wetland plant and animal populations.
Minor: Effects on wetland habitats would be measurable or perceptible. While mortality of individual plants and animals might occur, the viability of wetland populations and habitats would not be affected and the community, if left alone, would recover.
Moderate: A change in wetland habitats would occur. The change would be readily measurable in terms of abundance, distribution, quantity, or quality of populations of plants and animals. Mitigation measures would be necessary to offset adverse effects and would likely be successful.
Major: Effects on wetland habitats would be readily apparent and measurable. Extensive mitigation would be needed to offset adverse effects, and the success of mitigation measures could not be assured.
Duration: Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

Impacts of Alternative A

Under Alternative A, the only new proposed construction would be the new composting comfort station at Fern Lake. No wetlands would be affected by this project based on a review of available information (USFWS 2007b). No other park actions would adversely affect wetlands under Alternative A. The park would continue to manage and protect wetlands under existing management efforts. Overall, management actions taken under Alternative A would have **long-term, negligible and beneficial effects** on wetlands**.**

Cumulative Impacts

Management actions taken under Alternative A would have no adverse effects on wetlands in the park since wetlands would be avoided. Construction of projects in the past in the park and surrounding area listed in the "Cumulative Impact Analysis" section, may have affected some wetlands, but the extent and nature of these effects is unknown. Protection of the Fern Lake watershed has long-term, beneficial effects since the watershed and wetlands will avoid potential commercial development.

When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting wetlands are combined with actions under Alternative A, the resulting cumulative effects of Alternative A on wetlands are estimated to be **long- and short-term, negligible and beneficial**.

Conclusions

Overall, management actions taken under Alternative A would have **long-term, negligible and beneficial effects** on wetlands.

Construction of past projects in the park and surrounding area listed in the "Cumulative Impact Analysis" section may have affected some wetlands, but the extent and nature of these effects are not known. Protection of the Fern Lake watershed includes preservation of wetlands in the watershed, which is beneficial. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting wetlands are combined with actions under Alternative A, the resulting cumulative effects of Alternative A on wetlands are estimated to be **long- and short-term, negligible and beneficial**.

There would be no impairment of wetlands or values as a result of park actions under Alternative A.

Impacts of Alternative B

Under Alternative B, construction in the Developed Zone at Fern Lake could potentially affect wooded and emergent wetlands located in the vicinity. These resources would be identified in a site-specific environmental assessment during the design phase of any proposed projects in this or other areas. Since some new, as yet unidentified, facilities could also be constructed and operated in other parts of the park as appropriate by zone, there is also a potential that wetlands in these areas could be affected. These would also be identified prior to construction. In all cases, wetlands would be avoided, and, if not possible, mitigation measures would be used to address the effects. The park would adhere to U.S. Environmental Protection Agency section 404(b)(1) guidelines to avoid and minimize potentially adverse effects on wetlands. Restoration or enhancement of wetlands to offset any unavoidable losses would be taken as the last step in this process, as required. In addition, NPS guidelines for mapping and avoiding wetlands would also be followed. Overall, the effects of Alternative B on wetlands are estimated to be **long- and short-term, minor and adverse** because of the proximity of these habitats to Fern Lake, and the as yet undetermined potential for effects in other areas of the park.

Cumulative Impacts

When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting wetlands are combined with actions under Alternative B, the resulting cumulative effects of Alternative B would be **long- and short-term, minor and adverse**.

Conclusions

Overall, the effects of Alternative B on wetlands are estimated to be **long- and short-term, minor and adverse** because of the proximity of these habitats to Fern Lake, and the as yet undetermined potential for effects in other areas of the park.

When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting wetlands are combined with actions under Alternative B, the resulting cumulative effects of Alternative B would be **long- and short-term, minor and adverse**.

There would be no impairment of wetlands or values as a result of park actions under Alternative B.

Impacts of Alternative C

The effects of management actions taken under Alternative C would be similar to those in Alternative B. Therefore, the effects of Alternative C on wetlands are estimated to be **long- and short-term, minor and adverse**.

Cumulative Impacts

Cumulative effects of Alternative C on wetlands would be the same as those in Alternative B, **long- and short-term, minor and adverse**.

Conclusions

Overall, the effects of Alternative C on wetlands are estimated to be **long- and short-term, minor and adverse** because of the proximity of these habitats to Fern Lake and because of the as yet undetermined potential for effects in other areas of the park.

When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting wetlands are combined with actions under Alternative C, the resulting cumulative effects of Alternative C would be **long- and short-term, minor and adverse**.

There would be no impairment of wetlands or values as a result of park actions under Alternative C.

VEGETATION – NATIVE PLANT COMMUNITIES

Regulations and Policies

Regulations and policies that guide NPS actions with respect to Vegetation –Native Plant Communities, are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

Vegetation in particular native plant communities was identified as an issue since these natural resources could potentially be affected by construction and operation of new park facilities. Potential effects of the management alternatives on vegetation - native plant communities were estimated by comparing the location of plant communities in the park to areas in which construction and operation of new facilities would be most likely to occur. The effects of specific facilities under each alternative are assessed, as well as the more generalized potential effects of activities appropriate by zone. The types of effects evaluated include direct effects of clearing vegetation during construction activities, as well as the potential introduction of non-native species on new trails and parking lots from seeds from hikers' boots and clothing, dog fur, horse hair and manure, vehicle tires, wind, and trampling of vegetation on social trails. The park would identify and manage non-native plant populations, reducing their effects on native plant communities or possibly eliminating some strands from the landscape, thus improving species composition and habitat quality.

Areas where construction of new facilities could potentially occur would primarily include Developed Zones. The map of native plant communities in the park prepared by the University of Georgia Center for Remote Sensing and Mapping Science (UGA 2007) in Appendix G, was used for this impact assessment.

This analysis assumes that effects on native plant communities resulting from implementation of an alternative could be a direct result of construction and operation of park facilities. All effects on native plant communities are also assumed to be local in extent.

Prior to the construction of new park facilities, site-specific environmental assessments would be prepared that would assess the potential effects of specific sites and designs on native plant communities. Vegetation information provided in Appendix G may be used as an initial step in

evaluating effects on vegetation, and a formal survey of site-specific conditions would be conducted for specific construction projects.

Impact thresholds were used to estimate the intensity of estimated effects on vegetation - native plant communities. Thresholds for this impact topic are presented in Table 22.

Table 22. Impact Thresholds for Vegetation - Native Plant Communities
Negligible: Individual native plants may occasionally be affected, but measurable or perceptible changes in plant community size, integrity, or continuity would not occur.
Minor: Effects on native plants would be measurable or perceptible. The natural function and character of the plant community would not be affected and, if left alone, would recover.
Moderate: A change would occur in the natural function and character of the plant community in terms of basic properties (e.g., growth, abundance, reproduction, distribution, structure, or diversity) but not to the extent that the basic properties of the plant community would change.
Major: Effects on native plant communities would be readily apparent and would substantially and permanently change the natural function and character of the plant types.
Duration: Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

Impacts of Alternative A

Under Alternative A, the only new proposed construction would be the new composting comfort station at Fern Lake. Native plant communities could potentially be affected by construction of this facility. No other park actions would adversely affect native plant communities under Alternative A. The park would continue to manage native plant communities under the existing program. Overall, Alternative A would have negligible effects on native plant communities.

Increased use of trails under Alternative A could potentially cause adverse effects on native vegetation due to trampling or removal; however, management efforts would be taken to minimize or avoid such effects. Effects of operation could also include introduction of non-native species on new trails from seeds from hikers' boots and clothing, dog fur, horse hair, manure, and wind. The park would identify and manage non-native plant populations, reducing their effects on native plant communities or possibly eliminating some strands from the landscape, thus improving species composition and habitat quality.

The park would continue to manage native plant communities under the existing resource management program, which calls for minimization of potential adverse effects on these resources, management to control invasive species, and management to preserve the health and diversity of naturally vegetated habitats. The effect of Alternative A on the extent and values of native plant communities in the area is estimated to be **long-term, moderate and beneficial**.

Cumulative Impacts

Restoration of the Wilderness Road has had a highly beneficial effect on vegetation-native plant communities in the park due to planting of over 20,000 trees in Cumberland Gap. Construction of buildings, roads, parking lots, and other facilities in the park (see list in "Cumulative Impact Analysis" section) has resulted in clearing of some native vegetation, but these have been highly localized actions affecting a minor portion of the park.

The majority of the facilities in the park have already been constructed and only one minor facility is planned for the future. Minimal disturbance of vegetation- native plant communities would, therefore, occur in the future under Alternative A.

Operation of the facilities in the park would have negligible adverse effects on vegetation-native plant communities. Increased visitor activity would occur under Alternative A that could affect trails and could potentially result in the introduction of non-native species on trails from seeds from hikers' boots and clothing, dog fur, horse hair and manure, and wind, and trampling of vegetation on unauthorized trails. The park would continue to manage unauthorized trail usage to avoid adverse effects. The park would identify and manage nonnative plant populations, reducing their effects on native plant communities or possibly eliminating some strands from the landscape, thus improving species composition and habitat quality.

Restoration of Wilderness Road has resulted in a major beneficial effect on vegetation-native plant communities in the park. The non-native plant control program would result in further control of exotic plant species in the park. The composting comfort station project at Fern Lake would have negligible effects on native plant communities. The majority of the park would continue to be managed as Recommended Wilderness and zoned as such, which protects vegetation- native plant communities. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting native plant communities are combined with actions under Alternative A, the resulting cumulative effects of Alternative A on native plant communities are estimated to be **long- term, moderate and beneficial**.

Conclusions

Overall, management actions taken under Alternative A would have **long-term, moderate and beneficial effects** on vegetation - native plant communities because construction of a composting comfort station would cause a minor disturbance and existing programs to protect vegetation in the park would be continued.

Restoration of Wilderness Road has resulted in a major beneficial effect on vegetation-native plant communities in the park. The non-native plant control program would result in further control of exotic plant species in the park. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting native plant communities are combined with actions under Alternative A, the resulting cumulative effects of Alternative A on native plant communities are estimated to be **long- term, moderate and beneficial**.

There would be no impairment of vegetation - native plant communities or values as a result of park actions under Alternative A.

Impacts of Alternative B

Under Alternative B, construction of seven new, minor construction projects at Fern Lake, the Hensley Settlement, and the Wilderness Road Campground could potentially affect native plant communities. These resources would be identified in site-specific environmental assessments. Construction of some new, as yet, unidentified facilities could also potentially affect native plant communities.

Operation of new facilities, such as trails, could also potentially cause trampling of native vegetation along existing trails or newly created unauthorized trails; however, management efforts would be taken to minimize or avoid such effects. Areas where new facilities would be located would be identified during the course of site-specific environmental assessments, and potentially adverse effects of construction and operation would be minimized through proper alternatives analysis, site

selection, design, and best management practices. Overall, the effects of Alternative B on vegetation - native plant communities are estimated to be **long- and short-term, minor and adverse** because of the presence of these resources in the Developed Zone, and the as yet undetermined potential for effects in other specific areas of the park.

Cumulative Impacts

Alternative B would result in minor adverse effects on vegetation - native plant communities within the park. Other actions in the park would have cumulative effects similar to the effects of Alternative A. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting vegetation - native plant communities are combined with actions under Alternative B, the resulting cumulative effects of Alternative B would be **long- and short-term, moderate and beneficial**.

Conclusions

The effects of management actions proposed under Alternative B on vegetation - native plant communities, are estimated to **be long- and short-term, minor and adverse** because of the presence of these resources in the Developed Zone, and the as yet undetermined potential for effects in other areas of the park.

Alternative B would result in minor adverse effects on native plant communities within the park. Other actions in the park have had cumulative effects similar to Alternative A. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting vegetation - native plant communities are combined with actions under Alternative B, the resulting cumulative effects of Alternative B would be **long- and short-term, moderate and beneficial**.

There would be no impairment of vegetation - native plant communities or values as a result of park actions under Alternative B.

Impacts of Alternative C

Under proposed management actions in Alternative C, clearing of native plant communities could result from construction and the operation of 11 new minor facilities. However, existing plant communities would be identified in site-specific environmental assessments during the design phase of a proposed project. In addition, some additional vegetation could potentially be affected under Alternative C as a result of construction in other parts of the Developed Zone. Naturally vegetated areas would be identified prior to construction, and potentially adverse effects of construction and operation would be minimized through proper alternatives analysis, site selection, design, and best management practices. The effects of Alternative C on native plant communities are estimated to be **long- and short-term, minor and adverse**.

Cumulative Impacts

Cumulative effects of Alternative C on vegetation - native plant communities would be the same as in Alternative B, because only a limited number of facilities would be constructed and because potentially adverse effects of construction and operation would be minimized through proper alternatives analysis, site selection, design, and best management practices. Cumulative effects of these actions would, therefore, be similar to those under Alternative B, **long- and short-term, moderate and beneficial**.

Conclusions

Overall, the effects of Alternative C on vegetation - native plant communities are estimated to be **long- and short-term, minor and adverse** because only a limited number of facilities would be constructed and because potentially adverse effects of construction and operation would be minimized through proper alternatives analysis, site selection, design, and best management practices.

When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting native plant communities are combined with actions under Alternative C, the resulting cumulative effects of Alternative C would be **long- and short-term, moderate and beneficial**.

There would be no impairment of vegetation - native plant communities or values as a result of park actions under Alternative C.

SPECIES OF SPECIAL CONCERN

Regulations and Policies

Regulations and policies that guide NPS actions with respect to Species of Special Concern are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

Protection of species of special concern were identified as an issue since these natural resources could potentially be affected by construction and operation of new park facilities and visitor use. The assessment of effects of the alternatives on species of special concern is a qualitative prediction of the expected changes in habitat for listed plants and animals that might occur as a result of construction, operation, and use of new park facilities by visitors. The analysis includes those species that have been identified as occurring in the park, as summarized in Table 12 of Chapter 3, "Affected Environment."

Effects on federally listed species are defined specifically for each plant or animal in detail, based on the expected location of future potential construction projects in the park under each alternative. This analysis assumes that effects on federal-listed species of special concern resulting from implementation of an alternative would be a direct result of construction and operation of park facilities and/or changes in visitor use. All effects on species of special concern are also assumed to be local in extent.

In addition to federally listed species, a large number of State-listed species and other species listed by the Natural Heritage Program also occur in the park. A general qualitative assessment is provided for these species. A detailed assessment of all species of special concern, including site-specific surveys, would be completed as part of site-specific environmental assessments for individual proposed projects in the future. In addition, efforts to document and protect these species' populations currently present in the park would be completed. Restoration and /or monitoring plans would be developed as warranted. As part of the environmental assessments, plans include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques.

Impact thresholds are used to estimate the intensity of each estimated effect on species of special concern. The intensity of the effect is described according to both the NPS and U.S. Fish and Wildlife Service procedures. Thresholds for this impact topic are presented in Table 23.

Table 23. Impact Thresholds for Species of Special Concern
Negligible: No federal- or territorial-listed species would be affected, nor would the action affect an individual of a listed species or its critical habitat, but the change would not be of any measurable or perceptible consequence to the protected individual or its population. Negligible effect would equate with a "no effect" USFWS determination.
Minor: The action would result in detectable impacts to an individual (or individuals) of a federally or territorially listed species or its critical habitat, but they would not be expected to result in substantial population fluctuations and would not be expected to have any measurable long-term effects on species, habitats, or natural processes sustaining them. Minor effects would equate with a "may affect/not likely to adversely affect" USFWS determination.
Moderate: An action would result in detectable impacts on individuals or population of a federally or territorially listed species, critical habitat, or the natural processes sustaining them. Key ecosystem processes may experience disruptions that could result in population or habitat condition fluctuations that would be outside the range of natural variation (but would return to natural conditions). Moderate level adverse effects would equate with a "may affect/likely to adversely affect/adversely modify critical habitat" USFWS determination.
Major: Individuals or population of a federally or territorially listed species, critical habitat, or the natural processes sustaining them would be measurably affected. Key ecosystem processes might be permanently altered resulting in changes in population numbers that could affect the vitality of the population and permanently modify critical habitat. Major adverse effects would equate with a "may affect/likely to adversely affect/adversely modify critical habitat" USFWS determination.
Duration: Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

Impacts of Alternative A

Table 24 provides a summary of the effects of the alternatives on the four federally listed species known to occur in the park. These include the endangered Indiana bat (*Myotis sodalis*) (Endangered), the gray bat (*Myotis grisescens*), the Red-cockaded woodpecker (*Picoides borealis*), and the threatened blackside dace (*Phoxinus cumberlandensis*). The Yellow-billed cuckoo (*Coccyzus americanus*) is listed as a Candidate Species by the U.S. Fish and Wildlife Service and is not formally listed.

Under Alternative A, species of special concern in the park would continue to be managed as they currently are. The only new construction project in the park under Alternative A would include the construction of a composting comfort station at Fern Lake, which would not have any effects on species of special concern. Because no new facilities are proposed other then the construction of a composting comfort station at Fern Lake, Alternative A would have no effects on federally listed species due to construction activities. This would equate a "no effect" determination as defined by the U.S. Fish and Wildlife Service. In addition, preservation of the Fern Lake watershed would have beneficial effects on the Indiana bat, gray bat, and blackside dace, as summarized in Table 24.

Table 24. Potential Effects of the Alternatives on Federally Listed Species Reported From Cumberland Gap National Historical Park

Common and Scientific Name	Status	Effects of Alternative		
		Alternative A – No Action	**Alternative B**	**Alternative C**
Indiana bat (*Myotis sodalis*)	E	No new construction would occur under Alternative A. New construction would, therefore, have no adverse effect on the Indiana bat. Visitor use of the Fern Lake watershed is expected to experience an increase under this alternative. However, this is not expected to have an adverse effect on Indiana bats that might roost in the area since the amount of visitor activity is expected to be moderate, and no trees would be removed. Protection of the Fern Lake watershed could potentially result in a beneficial effect on the Indiana bat due to the protection of summer roost trees. Current management practices for the Indiana bat in the park would be continued. Education and outreach programs regarding protected species would remain at present levels, and would provide a beneficial effect on this species by making the public more aware of its occurrence in the park and of its specialized habitat requirements. Alternative A would result in a **long- and short-term, negligible and adverse** effect, which would equate with a "no effect" USFWS determination.	Construction and operation of proposed new facilities in wooded areas within several miles of Gap Cave, including Fern Lake, have a potential to affect summer roosting trees of the Indiana Bat. Construction of new facilities elsewhere in the park could also potentially affect this species. However, surveys would be completed prior to construction to determine whether the species is present and to assure that no adverse effects would occur. Preservation of the Fern Lake watershed could potentially result in a beneficial effect on the Indiana bat due to the protection of summer roost trees. Protection of the Indiana bat and bat habitat in the park would continue to occur under Alternative B. Alternative B would result in a long**-term, minor, adverse effect**, which would equate with a "may affect/not likely to adversely affect" USFWS determination.	Effects would be similar to those in Alternative B, except expansion of education and outreach programs would benefit the Indiana bat by making the public more aware of its habitat in the park and its specialized requirements. In addition, formalized caving partnering programs would involve increased visitor activity and research and knowledge of the caves. All activities would be managed according to established a cave management plan to assure protection of the Indiana bat. The plan calls for continued research on this species. Alternative C would result in an overall **long-term, minor, adverse** effect, which would equate with a "may affect/not likely to adversely affect" USFWS determination.

Table 24. Potential Effects of the Alternatives on Federally Listed Species Reported From Cumberland Gap National Historical Park (Continued)

Common and Scientific Name	Status	Effects of Alternative		
		Alternative A – No Action	**Alternative B**	**Alternative C**
Gray bat (*Myotis grisescens*)	E	If present, the gray bat could potentially use Fern Lake as a feeding area and Gap Cave for roosting. No new facilities would be constructed at Fern Lake; however, preservation of the Fern Lake watershed could potentially benefit the gray bat through protection of open water feeding areas. Caves would continue to be managed to protect the Gray bat and other listed species. Visitor use of the Fern Lake watershed is expected to experience an increase under all the alternatives. However, this is not expected to have an adverse effect on gray bats that might feed in open waters of the lake vicinity since the amount of visitor activity is expected to be moderate, and the types of activities would not be expected to change. Preservation of the Fern Lake watershed could potentially benefit the gray bat due to the protection of summer roost trees. If discovered in Gap Cave, procedures already established in the USFWS Recovery Plan for the Gray bat would be followed. Education and outreach programs regarding protected species would remain at present levels and would provide a continued benefit to this species. Alternative A would result in an overall **long- and short-term negligible adverse** effect, which would equate with a "no effect" USFWS determination.	Effects would be similar to those in Alternative A, except that limited construction of new facilities would occur in the vicinity of Fern Lake. However, since the gray bat feeds in open water areas, these limited new facilities around the edge of Fern lake would have **long-term, negligible and adverse** effects on the gray bat. Preservation at the Fern Lake watershed could be expected to benefit the gray bat by preserving the water quality of Fern Lake and the surrounding watershed. Alternative B would result in **long-term, negligible adverse** effect**,** which would equate with a "no effect" USFWS determination.	Effects would be similar to those in Alternative A, except that expansion of education and outreach programs would benefit the gray bat by making the public more aware of its occurrence in the park and of its specialized requirements. In addition, formalized caving partnering programs would involve increased visitor activity in the caves. However, all activities would be managed according to an established cave management plan to assure protection of the gray bat, if present. Alternative B would result in an overall **long-term, minor adverse** effect, which would equate with a "may affect/not likely to adversely affect" USFWS determination.

Table 24. Potential Effects of the Alternatives on Federally Listed Species Reported From Cumberland Gap National Historical Park (Continued)

Common and Scientific Name	Status	Effects of Alternative		
		Alternative A – No Action	**Alternative B**	**Alternative C**
Red-cockaded woodpecker (*Picoides borealis*)	E	No new construction would occur under Alternative A that could affect the red-cockaded woodpecker. No changes in operation of the park would occur under Alternative A that would change the habitat or that would otherwise directly affect red-cockaded woodpeckers. Alternative A would result in an overall **long- and short-term, negligible, adverse** effect, which would equate with a "no effect" USFWS determination.	Limited new construction in the park could potentially affect the red-cockaded woodpecker, but site-specific environmental assessments would be done to determine the potential for this species or its habitat to be present and impacts would be avoided. The majority of the park would continue to be managed as Recommended Wilderness and zoned as such, thereby protecting red cockaded woodpecker habitat. Alternative B would result in an overall **long-term, negligible adverse** effect, which would equate with a "no effect" USFWS determination.	Limited new construction in the park could potentially affect the red-cockaded woodpecker, but site-specific environmental assessments would be done to determine the potential for this species or its habitat to be present. Expansion of education and outreach programs would benefit the red-cockaded woodpecker by making the public more aware of its occurrence in the park and of its specialized requirements. Alternative C would result in an overall **long-term, negligible adverse** effect, which would equate with a "no effect" USFWS determination.
Blackside dace (*Phoxinus cumberlandensis*)	T	Davis Branch is an important refuge stream for the blackside dace. Davis Branch would not be affected by Alternative A, since no new construction would occur in this area, or in areas with similar characteristics elsewhere in the park. No changes in the ecological condition of Davis Branch or other streams in the park that provide habitat for this species are expected to occur under Alternative A. Alternative A would result in an overall **long- and short-term negligible adverse** effect, which would equate with a "no effect" USFWS determination.	Davis Branch is an important refuge stream for the blackside dace. Davis Branch would not be affected by Alternative B, since no new construction would occur in this area, or in areas with similar characteristics elsewhere in the park. No changes in the ecological condition of Davis Branch or other streams in the park that provide habitat for this species are expected to occur under Alternative B. Alternative B would result in an overall **long- and short-term negligible adverse** effect, which would equate with a "no effect" USFWS determination.	Effects would be similar to those in Alternative B, except that the expansion of education and outreach programs would benefit the blackside dace by making the public more aware of its occurrence in the park and of its specialized requirements. Alternative C would result in an overall **long- and short-term negligible adverse** effect, which would equate with a "no effect" USFWS determination.

A total of 14 other State-listed species of plants and animals, and 31 other species of plants and animals listed by the Natural Heritage Program, occur in a variety of habitats in the park (Table 12 in Chapter 3, "Affected Environment" section). These species occur in a wide variety of aquatic and terrestrial habitats. Because no new construction would be proposed under Alternative A, other than the Fern Lake composting comfort station (which would have no effect on these species), there would be no adverse effects.

Overall, management actions taken under Alternative A would result in **long- and short-term, negligible, adverse** effects on federally listed species, state-listed species, and species listed by the Natural Heritage Program. For federal species, this would equate with a "no effect" determination by the U.S. Fish and Wildlife Service.

Cumulative Impacts

Past actions that most likely affected species of special concern inside and outside the park, would include declaration of the Fern Lake watershed as being unsuitable for coal mining (Federal Register: September 23, 1996), construction of the Wilderness Road preservation project, and construction at nearby state parks (Wilderness Road State Park, Pine Mountain State Park). Prevention of coal mining in the Fern Lake area had a beneficial effect on species of special concern by maintaining natural habitats in the entire watershed. Acquisition of the Fern Lake watershed preserved a major portion of the watershed and prevents development or other land disturbing activities. During construction of the Wilderness Road project, an assessment of the effects on species of special concern was conducted and it was concluded that the project had no adverse effects. Mitigative measures would be used to address species of concern as appropriate during environmental assessment of this proposed project.

Projects in the park or surrounding area that could affect species of concern include the multi-laning of U.S. 25E between I-81 and I-75. Multi-laning of U.S. 25E would result in soil erosion during construction and clearing of vegetation. These effects would be minimized by implementation of best management practices. The multi-laning project would also result in increased storm water runoff to creeks in the vicinity, with an increase in the potential for soil erosion. Proper highway storm water design would help minimize these effects.

Continued management of the majority of the park as Recommended Wilderness and Zoned as such would continue to protect species of concern and their habitats.

The park would continue to provide habitat for protected species and manage these protected resources into the future. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting federally listed species, state-listed species, and species listed by the Natural Heritage Program are combined with actions under Alternative A, the resulting cumulative effects of Alternative A would be **long- and short-term, minor and adverse**. For federal species, this would equate with a "may affect/not likely to adversely affect" determination by the U.S. Fish and Wildlife Service.

Conclusions

Alternative A would result in **long- and short-term, negligible adverse** effects on federally listed species, state-listed species, and species listed by the Natural Heritage Program. For federal species, this would equate with a "no effect" determination by the U.S. Fish and Wildlife Service. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting federally listed species, state-listed species, and species listed by the Natural Heritage Program are combined with actions under Alternative B, the resulting cumulative effects of

Alternative A would be **long- and short-term, minor and adverse**. For federal species, this would equate with a "may affect/not likely to adversely affect" determination by the U.S. Fish and Wildlife Service. There would be no impairment of species of special concern as a result of park actions under Alternative A.

Impacts of Alternative B

Table 23 summarizes the specific estimated potential effects of Alternative B on federally listed species. Construction of the seven new specific facilities in Developed Zones under Alternative B could potentially adversely affect these species (Table 23). Additional and as yet unidentified construction of other new facilities in the Developed Zone under Alternative B could also potentially affect federally listed species (Table 23). Preservation of the Fern Lake watershed could have long-term, beneficial effects for the Indiana bat and gray bat (Table 23). Continued protection of habitat and management efforts in the park would provide long-term beneficial effects. Site-specific surveys for these species and detailed impact assessments would also be conducted as part of environmental assessments completed for individual construction projects in the future. Any mitigation required to protect these species would be identified at that time to avoid any adverse effects.

A total of 14 additional state-listed species of plants and animals and 31 additional species of plants and animals listed by the Natural Heritage Program are known to occur in a variety of habitats in the park (see Table 12 in Chapter 3). The effects of Alternative B on these species are not described in detail in this general management plan, but would also be related to the specific location and types of new facilities that would be constructed and operated in the park in the future. The potential for adverse effects would be greatest in Developed Zones, since these areas would be potentially subject to land clearing and soil disturbing activities. However, site-specific surveys for these species would also be conducted as part of environmental assessments for individual projects in the future, and surveys; avoidance and mitigation would be addressed.

The effect of Alternative B on the red cockaded woodpecker and the gray bat would be **long-term, negligible and adverse**, which would equate to a "no effect" USFWS determination**.** The effect of Alternative B on the Indiana bat would be a **long-term, minor, adverse** effect, which would equate to a "may affect, not likely to adverse affect" determination. The effect on the blackside dace would be a long-and short-term, negligible, adverse effect which would equate with a "no effect" USFWS determination.

Cumulative Impacts

The park would continue to provide habitat for protected species and manage these protected resources into the future. When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting federally listed species, state-listed species, and species listed by the Natural Heritage Program are combined with actions under Alternative A, the resulting cumulative effects of Alternative B would be **long-term, minor and adverse**. For federal species, this would equate with a "may affect/not likely to adversely affect" determination by the U.S. Fish and Wildlife Service.

Conclusions

The effect of Alternative B on the red cockaded woodpecker and the gray bat would be **long-term, negligible and adverse**, which would equate to a "no effect" USFWS determination**.** The effect of Alternative B on the Indiana bat would be a **long-term, minor, adverse** effect, which would equate to a "may affect, not likely to adverse affect" determination. The effect on the blackside dace would be a long-and short-term, negligible, adverse effect which would equate with a "no effect" USFWS determination.

When the adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting species of special concern are combined with actions under Alternative B, the resulting cumulative effects of Alternative B would be similar to Alternative A, **long-term, minor and adverse**. For federal species this equates to,which would equate to a "may affect/not likely to adversely affect" USFWS determination.

There would be no impairment of species of special concern or values as a result of park actions under Alternative B.

Impacts of Alternative C

The effects of Alternative C on species of special concern would be similar to those in Alternative B, except that 11 new minor facilities would be constructed in Alternative C. However, these would be minor facilities and would be sited according to the requirements of the National Environmental Policy Act to assure avoidance of effects on species of special concern. The potential for adverse effects on species of special concern would, therefore, be similar to that in Alternative B. In addition, increased partnering, education, and outreach under Alternative C would provide beneficial effects due to increased visitor awareness and sensitivity to species protection. The overall result would be a **long-term, minor adverse effect** on species of special concern, which equates to a "may affect/not likely to adversely affect" U.S. Fish and Wildlife Service determination for federal species.

Cumulative Impacts

Cumulative effects of management actions proposed under Alternative C on species of special concern would be the same as those under Alternative B, **long- term, minor and adverse**. For federal species this equates to a "may affect/not likely to adversely affect" U.S. Fish and Wildlife service determination.

Conclusions

The effects of Alternative C on species of special concern would be similar to those in Alternative B, except that increased partnering, education, and outreach would provide beneficial effects due to increased visitor awareness and sensitivity toward species protection. The overall result would be a **long-term, minor adverse effect** on species of special concern, which equates to a "may affect/not likely to adversely affect" U.S. Fish and Wildlife Service determination.

Cumulative effects of Alternative C on species of special concern would be the same as those in Alternative B. Cumulative effects of management actions proposed under Alternative C on species of special concern would be the same as those under Alternative B, **long- term, minor and adverse**. For federal species this equates to a "may affect/not likely to adversely affect" U.S. Fish and Wildlife service determination.

There would be no impairment of species of special concern as a result of park actions under Alternative C.

SOUNDSCAPE

Regulations and Policies

Regulations and policies that guide NPS actions with respect to soundscape are summarized in the "Service-wide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

Protection of the soundscape of the park was identified as an issue during the public scoping process. The area analyzed for possible effects on soundscape includes the park and the area immediately surrounding the park. The major assumptions used in the analysis were: (1) no sound measurements were recorded for this analysis, therefore, a qualitative analysis was prepared instead of a quantitative analysis; (2) additional visitation and more extended visitation would result in additional noise, particularly in Developed Zones of the park; (3) Developed Zones that result in more facilities being constructed would result in additional noise during construction, operation, maintenance, and use; (4) construction of new facilities would result in short-term noise impacts; (5) maintenance of grounds and facilities often require use of power tools that create noise during use; (6) actions outside the park that are beyond the jurisdiction of the NPS can result in increased noise levels inside the park; and (7) the western end of the park, located adjacent to the Middlesboro–Harrogate urbanized area, would experience higher levels of noise than would the eastern end of the park, which is surrounded by more rural land.

Impact thresholds used for estimating the intensity of different types of effects on soundscape are presented in Table 25.

Table 25. Impact Thresholds for Soundscape

Negligible: Human-caused or project specific sounds do not compete with ambient sounds. Where noise is audible, it is for a short duration, with significantly lengthy periods of time that are noise-free.	
Minor: Human-caused or project sounds are detectable above ambient sounds; however, there are frequent periods of time that are noise-free.	
Moderate: Human-caused or project sounds compete with ambient sounds. The noise generated is perceptible; however, there are short periods of time that are noise-free.	
Major: Human-caused sounds dominate the soundscape and replace natural sounds. Natural sounds in the project area are commonly impacted by noise from management or recreational activities for most of the day without periods of time that are noise free.	
Duration:	Long-term: Takes more than one year to recover. Short-term: Recovers within one year.

Impacts of Alternative A

Under Alternative A, effects on soundscape would be limited because other then a proposed composting comfort station at Fern Lake, no new facilities would be constructed and operated. The size of the existing Development Zones (using the terminology for zones defined in the 1979 plan) would remain unchanged and facilities in these areas would require no additional routine maintenance. The soundscape at the Hensley Settlement and other historic features of the park would be expected to be maintained, with the infrequent sounds of visitors and the solitude that the historic setting offers preserved. The exception to this would be during special events when more visitors are likely to be present, park staff are engaged in living history activities, and associated sounds would be expected to be heard. Therefore, sound levels would remain near current levels throughout the park.

Continuation of existing levels of education and outreach and continuation of existing levels of informal partnering with caving groups, educational institutions, Daughters of the American Revolution, Wilderness Road State Park, and other organizations, would maintain current levels of use of the park, which would also maintain visitation levels at the park. Therefore, human-created sound levels associated with these activities would remain near current levels under Alternative A.

The overall effect of Alternative A on the soundscape would be **long-and short-term, negligible, and adverse**.

Cumulative Impacts

Past projects in the park, listed in Chapter 2, have attracted additional visitors to the park and could encourage a longer stay in the park. These actions have attracted, and will continue to attract, additional visitors who would add human-related noise to the soundscape of the park. The construction of facilities also resulted in additional noise in the park. The multi-laning of U.S. 25E allows for additional visitors to the U.S. 25E Cumberland Gap tunnel, located inside the park, and has also created additional noise. While the additional traffic increased noise levels in the area surrounding the tunnel, most of the noise created by road traffic is confined to the tunnel area and only the loudest trucks and motorcycles can be heard from more interior areas of the park, including Pinnacle Overlook.

Relocation of the "Glacier Girl" away from the Middlesboro-Bell County Airport resulted in a slight noise reduction in the park during the few times each year that the plane took off or landed near Pinnacle Overlook.

Declaration of the Fern Lake watershed as being unsuitable for coal mining (Federal Register: September 23, 1996) resulted in less mining in the vicinity of the park that resulted in fewer trucks and employee vehicles on the road and, therefore, less noise. Protection of the Fern Lake Watershed and zoning of the Recommended Wilderness preserved the natural soundscape in a majority of the park.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting the soundscape are combined with actions under Alternative A, the resulting cumulative effects would be **long- and short-term, minor, and adverse.**

Conclusions

The overall effect of management actions taken under Alternative A on the park's soundscape would be **long- and short-term, negligible, and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting transportation are combined with actions under Alternative A, the resulting cumulative effects would be **long- and short-term, minor and adverse.**

There would be no impairment of soundscape or values as a result of park actions under Alternative A.

Impacts of Alternative B

Under Alternative B, a few minor facilities could be constructed within the proposed Developed Zone, which is approximately two times larger than the Developed Zone in Alternative A. Construction of a limited number of new facilities could occur in Developed Zones at Fern Lake, the Park headquarters area, Sugar Run, the Wilderness Road Campground/Gap area, and the Hensley Settlement. Creation of a new Developed Zone at Fern Lake could result in construction and operation of a limited number of new park facilities in this area. This would provide opportunities for fishing and non-motorized and electric trolling motor boating for visitors to the park. Therefore, human created sound levels could increase beyond levels associated with Alternative A.

The new Developed Zones on the east and west sides of the Hensley Settlement could result in additional noise in these areas. For example, there could be additional guided tours and other activities at Hensley Settlement, as well as improved access, via a new parking facility, at the base of

Brush Mountain. In addition, improvements made to Shillalah Creek Road, near the Hensley Settlement, would also have improved access and additional visitors. Recreational vehicle capacity of the campground would be increased by adding one electrical loop. Some minor projects could also be constructed in other parts of the park. These facilities could be utilized by visitors for their enjoyment and education. Facility improvements could attract additional visitors to the park, which would increase the noise level. In addition, there would be more areas that would require periodic maintenance, including maintenance with power machinery. This would add to the existing human-caused sound levels in the Developed Zones and would result in higher noise levels as compared to levels in Alternative A. In addition, any construction that would occur would elevate man-made sounds in the area during the construction period.

The levels of education, outreach, and partnering would be the same as those described for Alternative A. The effects of these activities on soundscape would be the same as those described for Alternative A.

The overall effect of management actions proposed under Alternative B on soundscape would be **long- and short-term, minor, and adverse**.

Cumulative Impacts

Cumulative effects of Alternative B on soundscape would be the same as those identified for Alternative A, **long- and short-term, minor, and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting the soundscape are combined with actions under Alternative B, the resulting cumulative effects would be **long- and short-term, minor, and adverse**.

Conclusions

The overall effect of management actions proposed under Alternative B on soundscape would be **long- and short-term, minor, and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting soundscape are combined with actions under Alternative B, the resulting cumulative effects would be **long- and short-term, minor, and adverse**.

There would be no impairment of soundscape or values as a result of park actions under Alternative B.

Impacts of Alternative C, the Preferred Alternative

The effects of Alternative C would be similar to those described for Alternative B. However, expansion of the existing levels of education, outreach, and partnering would result in increased levels of visitor use, which could increase visitation to the park. As more visitors and special events are anticipated than in Alternative A, human-related sound levels could increase above the levels associated with Alternative A. Human-generated noise would be short-term and associated primarily with special events. The overall effect of Alternative C on soundscape would primarily be long-and **short-term, minor, and adverse**.

Cumulative Impacts

Cumulative effects of Alternative C on soundscape would be the same as those identified for Alternative A. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting the soundscape are combined with actions

under Alternative C, the resulting cumulative effects would be **long- and short-term, minor, and adverse**.

Conclusions

The overall effect of Alternative C on soundscape would be **long- and short-term, minor and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting transportation are combined with actions under Alternative C, the resulting cumulative effects would be **long- and short-term, minor and adverse**.

There would be no impairment of soundscape or values as a result of park actions under Alternative C.

CULTURAL RESOURCES

This section assesses the potential effect of the alternatives on cultural resources. These include archeological resources, cultural landscapes, historic districts, historic buildings and structures, and ethnographic resources. Despite the fact that none of the landscapes at Cumberland Gap National Historical Park have been formally inventoried or designated as cultural landscapes, it seems apparent that at least two historic areas of the park – the Hensley Settlement and Cumberland Gap Historic District – include many characteristics of a cultural landscape. Other areas in the park also contain elements of cultural landscapes reflecting the Civil War, industrial development, and early settlement. The impacts on these potential cultural landscapes are therefore assessed under the Cultural Landscapes impact topic.

Regulations and Policy

The regulations and policies that guide NPS actions with respect to historic and cultural resources are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B. Regulations for implementing the National Environmental Policy Act and the National Historic Preservation Act require the analysis of the effects of proposed actions on important cultural resources., Each of the acts has a different set of definitions for assessing effects on cultural resources. To comply with the requirements of both of the acts, this general management plan and environmental impact statement uses both sets of definitions to evaluate effects on the cultural resources of Cumberland Gap National Historical Park.

Method

Protection of the cultural resources while providing increased access in the park was identified as an issue during the public scoping process. This section summarizes how potential effects on these resources were assessed according to the requirements of the National Historic Preservation Act and the National Environmental Policy Act. The following discussion correlates the different requirements of the two acts. As a result, the impact criteria for cultural resources are presented in a different format from the other impact topics in this general management plan/environmental impact statement.

Section 106 Methodology

To implement Section 106 of the National Historic Preservation Act, the Advisory Council on Historic Preservation (Advisory Council) has published regulations at 36 Code of Federal Regulations 800. These regulations, entitled "Protection of Historic Properties", provide guidance for determining whether a *historic property* (defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National

Register [NHPA Section 301 (5) and 36 Code of Federal Regulations 800.16(1)(1)]) is eligible for inclusion on the National Register of Historic Places (National Register) and provides a procedure for nominating such properties to the register.

The regulations define what constitutes an impact or effect on a historic property listed on or eligible to be listed on the National Register. In accordance with 36 Code of Federal Regulations 800, the effects on archeological resources, ethnographic resources, historic buildings and structures, and cultural landscapes are identified and evaluated by:

- Determining the area of potential effects;
- Identifying historic properties present in the area of potential effects that are either listed in or are potentially eligible to be listed in the National Register;
- Applying the criteria of adverse effect to all the listed or potentially eligible cultural resources that could be affected; and
- Considering ways to avoid, minimize, or mitigate adverse effects.

This approach is applied when specific information on a proposed project is available. However, specific details of the proposed actions contained in this general management plan are not yet available, and identification and evaluation of potentially affected cultural resources are not possible. Effects on cultural resources are therefore assessed based on a qualitative description of future activities within zones as defined under each alternative. Future implementation of projects will contain specific details regarding the project and the affected historic properties, and will require full National Environmental Policy Act NEPA and Section 106 compliance, including consultation with the state historic preservation officers of Virginia, Kentucky, and Tennessee. This approach achieves compliance with Section 106 of the National Historic Preservation Act and the 2008 programmatic agreement between the Advisory Council on Historic Preservation and the NPS. In all cases, the NPS will comply with Section 106 of the National Historic Preservation Act in accordance with 36 CFR 800 as part of the planning process for implementation of this general management plan.

The 2008 Programmatic Agreement between the NPS and the Advisory Council on Historic Preservation states that the state historic preservation officer (SHPO) cannot agree on a "no effect" finding until a specific project is proposed and analyzed. Therefore, all potential effects on cultural resources managed under Section 106 are defined as an "adverse effect". An adverse effect occurs whenever an action alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register. This type of effect could include diminishing the integrity of the resource, its location, design, setting, materials, workmanship, feeling, or association of a cultural resource. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or which are cumulative (36 Code of Federal Regulations 800.5(a) (1)).

Because cultural resources are nonrenewable, all adverse effects on National Register-eligible cultural resources in Cumberland Gap National Historical Park would be long-term and would have a high level of concern and would undergo full analysis and consideration under any future site specific proposed actions.

An analysis of impacts is provided in the subsections that follow. Both National Environmental Policy Act methods and Section 106 methods are described. A separate Section 106 summary follows the analysis of impacts on cultural resources. The Section 106

summary provides a general assessment of the effects of the undertaking (implementation of the alternative) on historic properties, based on criteria in the Advisory Council's regulations.

National Environmental Policy Act Assessment Methods

The assessment of effects of the alternatives on cultural resources within the area of potential effect was based on a comparison of conditions under each alternative to Alternative A, the No Action Alternative. Context, intensity, and duration of potential impacts on cultural resources were assessed using criteria established in a set of thresholds developed for each impact topic. Alternatives involving higher levels of physical disturbance/change in relation to Alternative A, the No Action Alternative, have a higher potential to adversely affect cultural resources.

Thresholds were used to estimate these effects. Thresholds for each of the impact topics were based on different criteria as follows:

- **Archeological Resources Eligible for/Listed on the National Register of Historic Places:** Thresholds are based on a variety of criteria, including data retrieval potential, degree of expected disturbance, whether or not preservation would occur, number of sites, and size of the site (including whether the affected area is a District.
- **Cultural Landscapes, Historic Buildings, Structures and Districts Listed in or Eligible for the National Register of Historic Places:** The potential for an alternative to diminish the significance or integrity of the resource(s) to the extent that their National Register eligibility is affected was• used as the primary criterion for estimating effects. Beneficial effects were assessed based on the potential to maintain, preserve, or stabilize resources.
- **Ethnographic Resources (Including Traditional Cultural Properties and Values) Listed in or Eligible for the National Register of Historic Places:** The potential to alter resource conditions such as traditional access or site preservation, or the relationship between the resource and the affiliated group's body of beliefs and practices was used as the primary criterion for estimating effects. Beneficial effects of a proposed action were based on the potential to enhance traditional access and/or accommodate a group's traditional practices or beliefs.

For purposes of the impact analysis for cultural resources in this document, lands within the park boundaries and within the confines of the Fern Lake watershed acquisition are considered the area of potential effect. Effects on virtually all cultural features other than vegetation components were considered to be long-term effects because most cultural resources are non-renewable. These would include any effects on archeological, historic, or on non-vegetation elements of a cultural landscape.

For historic resources, it was also assumed that development and implementation of resource inventories and other cultural resource-related plans (see Chapter 2) would help avoid, minimize, or reduce the potential adverse effects of NPS actions. Typical mitigation measures are described in Table 9 "Summary of Mitigation Measures and Best Management Practices" in Chapter 2. Historic resources would be managed to maintain their resource condition and character. All stabilization/preservation of historic features/structures/landscapes would be conducted in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and character, in accordance with relevant Cultural Landscape Report(s) and Historic Structure Report(s). Studies to identify historic properties and assess effects would be carried out in advance of undertakings and would comply with the requirements of Sections 106 and 110 of the NHPA, 36 Code of Federal Regulations 60, 36 Code of Federal Regulations 800, and NPS Director's Order 28.

The Council on Environmental Quality (1978) regulations for implementing the National Environmental Policy Act and Director's Order 12 (NPS 2001b) call for a discussion of the appropriateness of mitigation with an analysis of how effective the mitigation would be in reducing the intensity of a potential impact (for example, reducing the intensity of an impact from major to moderate or minor). However, any reduction in intensity of impact from mitigation is an estimate of the effectiveness of mitigation only under the National Environmental Policy Act. The level of effect as defined by Section 106 is not similarly reduced, because cultural resources are nonrenewable and adverse effects that consume, diminish, or destroy the original historic materials or form, will result in a loss in the integrity of the resource that can never be recovered. Therefore, even if actions determined to have an adverse effect under Section 106 may be mitigated, the effect remains adverse.

Impacts of Alternative A on Archeological Resources

Certain important questions about human history can only be answered by the actual physical material of cultural resources. Archeological resources have the potential to answer, in whole or in part, such questions. An archeological site can be eligible for listing in the National Register of Historic Places under Criterion D if the site has yielded, or is likely to yield, information important to prehistory or history. Criterion D encompasses the properties that have the potential to answer, in whole or in part, those types of research questions (NPS 1995). An archeological site can be nominated to the National Register of Historic Places in one of three historic contexts or levels of significance: local, state, or national (NPS 2002c).

Laws and regulations applicable to archeological resources, the method used to analyze potential impacts of an action, and the area of potential effect are described above. For archeological resources, until a National Register evaluation for any site is completed, it would be assumed that the site is eligible for listing on the register.

For purposes of analyzing impacts on archeological resources, thresholds of change for the intensity of an impact are based on the potential of the site to yield information important to prehistory or history, as well as the probable historic context of the affected site. The historic context of the site is based on the presence or absence of significant ties to a living community's cultural identity. For example, an archeological site located at the Hensley Settlement would be expected to have significant ties to the community's cultural identity through a Living Community Group. This would represent a significant tie to a living community's cultural identity. Thresholds used to evaluate effects on archeological resources are defined in Table 26.

Table 26. Impact Thresholds for Archeological Resources Eligible for/Listed on the National Register of Historic Places

Negligible effect: Impact is at the lowest levels of detection – barely measurable, with no perceptible consequences, either adverse or beneficial, to archeological resources.
Minor adverse effect: The action would affect one or more archeological sites with modest data potential and no significant ties to a living community's cultural identity. The site disturbance would result in little, if any, loss of important information potential.
Minor beneficial effect: The action would result in preservation of a site in its natural state.
Moderate adverse effect: The action would affect one or more archeological sites with good data potential and possible ties to a living community's cultural identity. Site disturbance would be noticeable.
Moderate beneficial effect: The alternative would noticeably enhance the protection or preservation of one or more archeological sites that are listed or are eligible for the National Register.
Major adverse effect: The action would impact one or more archeological sites or districts

listed in, or eligible for the National Register and/or that has possible ties to a living community's cultural identity, resulting in loss of site or district integrity. Site disturbance or resource degradation would be highly visible.
Major beneficial effect: The alternative would substantially enhance the ability to protect and interpret important archeological resources and would foster conditions under which archeological resources and modern society can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations.
Duration: Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

Restoration of Cumberland Gap through major changes in the park's physical setting was designed to provide visitors with a better vision and understanding of the historic nature of the Gap and the Wilderness Road. However, existing management programs and zoning predate these physical changes in the landscape, lack the benefits of updated desired conditions, and do not include the enhanced potential for visitor understanding and appreciation afforded by restoration. The kinds and locations of visitor activities, facilities, and management actions appropriate for the park previous to restoration of the Gap, may not be equally beneficial post-restoration. Under Alternative A, continuation of existing park management programs and staffing related to cultural resources would not adequately or accurately reflect these major physical changes or related resource needs.

Management of the park's archeological resources is complicated by the fact that many areas lack intensive surveys. As discussed in the "Affected Environment" section, there is the possibility that there are unknown prehistoric and historic archeological resources within the boundaries of the park and in the Fern Lake area. Unknown, undocumented sites cannot be protected, and such sites could suffer adverse effects from unwitting visitor or management actions. Upon acquisition of Fern Lake and its watershed, cultural resource investigations would be initiated to identify, document, and evaluate the National Register significance of area resources. Planning for any new facilities would draw upon the survey and investigation findings to help avoid damage to archeological resources.

Although no ground-disturbing construction activity other than the construction of a composting comfort station at Fern Lake are proposed, any ground-disturbing activities associated with the Alternative A would have the potential to adversely affect such sites. Until inventory of un-surveyed areas of the park occurs, there could be some potential for inadvertent damage to unknown sites, resulting in adverse effects to these resources. Fern Lake has potentially been used historically. Visitor use and development here could impact remnants of occupation or resource uses. Here and elsewhere in the park, development, maintenance, or improvement of facilities would be preceded by appropriate archeological investigations in compliance with Sections 106 and 110 of the National Historic Preservation Act, 36 Code of Federal Regulations 800, NPS Management Policies, and NPS Directors Order #28.

None of the known sites have been evaluated individually for National Register status, although a number are considered contributing elements to the Gap and Hensley historic districts. Without an evaluation of National Register significance and the integrity of recorded or known sites, it is difficult to develop appropriate, proactive management actions. Consequently, un-evaluated sites might not be adequately protected. Thus, lack of information could have an adverse effect on archeological resources.

Many of the park's known archeological resources are associated with the early history of the settlement and development of the area or with Civil War activities, and are located in

areas receiving frequent visitor use. Thus, archeological sites may be vulnerable to unauthorized collecting, trampling, or displacement by erosion.

Archeological sites are vulnerable to natural processes as well as human actions. Bioturbation from insects and rodents can loosen structural features and disrupt soil stratigraphy. By mixing older and newer deposits, definition of different site occupants, functions, or periods of use are made more difficult. Vegetation growing in foundations or through and over structural ruins would continue to contribute to localized site degradation by expanding cracks and displacing structural elements. In the future, the integrity of some sites would continue to be degraded by natural processes such as wind and water erosion and vegetation encroachment, or by vandalism or inadvertent damage by visitors.

Archeological sites also would benefit under Alternative A. NPS management policies and programs would continue to provide an umbrella of protection for known sites by establishing proactive procedures for site identification, evaluation, management, preservation, and interpretation. On-going park programs and visitor education, ranger patrols, and site avoidance during future ground disturbing activities in the park, would help slow the negative trend of site deterioration and the loss of information described above. Sites within the park would be less vulnerable to development activity than in surrounding areas. The park's numerous interpretive, outreach, and educational programs, and its partnering with local and regional organizations would continue as funding allows; these programs would help encourage visitor stewardship of archeological resources. Programs that educate visitors about the importance of cultural resources would help to discourage looting and inappropriate uses.

Under Alternative A, the size of the park and the complexity of its resources, combined with the lack of updated management zoning and desired future conditions, and with staffing and funding constraints, would contribute to future adverse effects on some archeological resources. Under Alternative A, the possibility, therefore, exists for **long-term, minor to moderate, adverse effects** on archeological resources in more frequently visited areas. NPS resource management strategies would continue to have **long-term, minor to moderate benefits** for the park's non-renewable resources threatened by natural processes or inappropriate visitor use.

Cumulative Effects

The time period included in this cumulative analysis stretches from the 1700s to the present; the area considered includes the park and the immediately adjacent areas. Archeological resources in the park are part of a larger cultural continuum that includes adjacent communities as well. Because of their age and non-renewable nature, archeological sites are especially vulnerable to deterioration and loss. In the past, human activities such as construction of regional and local transportation corridors, housing, recreational, and industrial facilities, both inside and outside the park have combined with natural processes such as wind, water, gravity, and bioturbation by insects and rodents to modify, add to, or destroy cultural sites, both within and adjacent to the park. Damming of the Little Yellow Creek to create Fern Lake in the 1880s, and more recently, creation and development of the park as well as other regional developments such as Whitmer Industrial Park and Bell County Technology and Training Park, may have buried or destroyed some prehistoric and protohistoric sites. These present resource losses across this broad geographic area have reduced the integrity and the numbers and types of sites available for research and interpretation, leaving a somewhat skewed vision of past cultures for the future generations. Similar human activities and natural processes are expected to continue into the future, contributing to **long-term, moderate and adverse,** cumulative effects on archeological resources.

Over the years, NPS management policies and programs have provided an umbrella of protection for cultural sites by establishing proactive procedures for their identification, evaluation, management, and interpretation. The park's resource management plans and various special studies have provided the best possible care for non-renewable resources. Future resource stewardship strategies would contribute to the care and management of the valuable resources. These actions have had **a long-term beneficial effect** on archeological resources.

When the moderate adverse effects of other past, present, and future plans, projects, and activities affecting archeological resources in the park and surrounding areas are combined with the **minor to moderate, beneficial and adverse impacts** in Alternative A, the resulting cumulative effects would be **long-term, moderate, and adverse**. Effects would be **moderate and adverse** because the numbers and extent of sites affected in areas surrounding the park far outweigh the benefits of park programs on resources within park boundaries.

Conclusions

Under Alternative A, there would be a possibility for **long-term, minor to moderate, adverse effects** on archeological resources in selected areas, including Fern Lake, primarily due to lack of updated management zoning and visitor use. **Long-term, minor to moderate benefits** possibly would accrue from continuing NPS management actions and protection of sites within the park. Cumulative effects would possibly be **long-term, moderate and adverse** (adverse effects on regional sites outweigh benefits from park programs on sites within park boundaries).

There would be no impairment of archeological resources or values as a result of park actions under Alternative A.

Impacts of Alternative B on Archeological Resources

As compared to Alternative A, Alternative B would provide for larger and more numerous Developed Zones, greater potential for new facilities, and increased visitor access. In addition, construction of seven new minor facilities in Developed Zones at the Hensley Settlement, Fern Lake and the Wilderness Road Campground would be constructed, and would have a possibility to affect archeological resources (see Chapter 2 for detailed information on these projects).

Under Alternative B, management zones for the park (including a Cultural Resource Zone) would be established to define the types of visitor experience, resource condition, activities, and facilities that are appropriate for each zone. Two historic areas would be included within the Cultural Resource Zones: the Hensley Settlement and Cumberland Gap. These Cultural Resource Zones would include slightly more acreage (608 acres) as compared to the existing historical zones with 573 acres. Alternative B proposes a high level of resource and visitor management so as to protect resources in the Cultural Resource Zone, with a low tolerance for resource degradation.

The number of visitors at the Hensley Settlement would be expected to increase due to the availability of a limited number of new facilities. Under Alternative B, increased pedestrian traffic could, therefore, result in loss of ground cover and erosion of pathways and areas around historic structures. Erosion has been previously documented around the historic structures at the settlement. Erosion results in loss of archeological deposits and the displacement and deterioration of artifacts. Also, there are aboveground features such as collapsed chimneys and foundations that are vulnerable to climbing and displacement of stones. Continuing park maintenance would help to rehabilitate unauthorized trails and to limit erosion, however.

Under Alternative B, the Cultural Resource Zone and Developed Zone to the west would be enlarged. Additional and upgraded access routes and an enlarged parking area at the Hensley Settlement would involve ground disturbance. Because much of this ground disturbance would occur in the vicinity of a historic site, the potential for encountering subsurface archeological resources would be heightened. Prior to development of the final design, archeological investigations, as described in Table 9 of Chapter 2, would be initiated to identify the potential presence, location, and significance of archeological resources, and to help define areas where new parking and access facilities would have the least possible effect on archeological sites.

These new facilities could have an adverse effect on any archeological resources present; once an archeological site has been disturbed, it cannot be restored. However, formal archeological investigations conducted as part of a planned mitigation or research program can reveal a great deal of additional information about the history of the area, about the people who lived here, and about their lifestyles. This information would be a valuable addition to the park's interpretive programs. Such interpretative programs would be important in developing a sense of resource stewardship among visitors. However, despite the educational and scientific research benefits, excavation of archeological remains is almost always considered an adverse effect as defined by Section 106 of the National Historic Preservation Act.

Under Alternative B, the historic Cumberland Gap area would also be designated as a Cultural Resource Zone. This zone would be the same size as the historical zone designated at the Gap due to the differences in planning methods and mapping techniques. There are a number of sites in the Gap area where artifacts are present on the surface. Some sites, such as Hensley, contain exposed features. In addition, archeological investigations associated with restoration of the Gap, as well as the extensive ground modification, would reduce the potential for the presence of artifacts or features. As appropriate, additional archeological investigations (as described above) would be conducted to help ensure that the new Developed Zone, trail connections, and trail extensions do not harm significant archeological resources.

Alternative B also proposes some construction of new facilities and increased access to other areas of the park outside of the two Cultural Resource Zones. As described above, development of parking, new structures, and trails at Fern Lake and elsewhere could have adverse effects on archeological resources by damaging features and mixing soil strata. Appropriate archeological investigations would be designed to reduce the potential for encountering significant subsurface resources in Developed Zones.

Increased access would increase the potential for opportunistic damage to archeological resources to occur, due to trampling, erosion, unauthorized collecting, and vandalism. Improved access would possibly cause an increase in the numbers of visitors in these areas; the presence of other visitors is often a powerful deterrent to unlawful behavior. New facilities would be provided to maximize resource protection. The creation of properly designed trails would benefit archeological resources by reducing creation and use of unauthorized trails that can result in increased erosion and displacement of nearsurface/surface artifacts.

Effects from natural processes would be the same as described in Alternative A.

Under Alternative B, there would be a possibility for **long-term, negligible to minor, adverse** effects on archeological resources and **minor to moderate benefits** for park management of these resources. If significant resources were located in the Hensley Settlement areas proposed for project construction, archeological investigations, preparation of an environmental assessment, and implementation of mitigation measures would reduce the impact intensity. Adverse effects of development would also be reduced by mitigation measures described under

"Best Management Practices" and by management strategies. Newly defined, desired future conditions and zoning would join with on-going partnering, outreach, and educational programs, possibly resulting in **long-term, minor to moderate benefits** to archeological resources.

Cumulative Effects

Under Alternative B, the time period, area of effect, and cumulative effects of archeological resources would be much the same as described in Alternative A (e.g., effects on resources in areas surrounding the park would be the same as described in Alternative A). The potential for adverse effects from development actions at Fern Lake and Hensley Settlement, and from creation of new access routes/connections, would be slightly more increased than in Alternative A, but when protective and mitigating measures of Alternative B are added, the overall cumulative effect would not be appreciably changed.

Thus, when the moderate adverse effects of other past, present, and future plans, projects, and activities affecting archeological resources in the park and surrounding areas are combined with the **minor to moderate, beneficial, and negligible to minor, adverse** impacts under Alternative B, the resulting cumulative effects would be **long-term, moderate, and adverse**. Effects would be moderate and adverse because the numbers and extent of sites affected in areas surrounding the park far outweigh the benefits of park programs for resources within park boundaries.

Conclusions

Under Alternative B, there would be a possibility for **long-term, negligible to minor, adverse effects** on archeological resources from development of new access routes, parking, visitor use, and natural processes. Mitigating measures would help reduce the potential for effects from development proposed in the vicinity of the Hensley Settlement.

The management strategies and zoning accompanied by the newly defined desired future conditions, along with partnering, outreach and educational programs would possibly have **long-term, minor to moderate benefits** on archeological resources. Cumulative effects would be **long-term, moderate, and adverse**, largely due to the numbers and extent of archeological resources affected in areas surrounding the park.

There would be no impairment of archeological resources under Alternative B.

Impacts of Alternative C on Archeological Resources

Compared to Alternative A, Alternative C would provide for larger and more numerous developed zones, greater potential for new facilities, and increased visitor access. This would increase the potential for adversely affecting archeological resources. In addition, 11 new minor facilities in the Developed Zones at the Hensley Settlement, the base of Brush Mountain, Fern Lake, and the Wilderness Road Campground would be constructed. These would potentially affect archeological resources (see Chapter 2 for detailed information on these projects).

Similar to Alternative B, few *in situ* artifacts or archeological features would be expected at a number of these sites (such as park headquarters and visitor center) due to previous archeological investigations and ground disturbance during construction and Gap restoration. However, other proposals would be preceded by archeological studies and possible discovery of archeological resources. With appropriate compliance actions, testing, and avoidance, as described in Alternative B, archeological resources would possibly have **long-**

term, minor, adverse effects under Alternative C. Costs for the amount of archeological work needed for implementation of Alternative C would, however, be higher compared to Alternative A.

Creation of many new ways for visitors to access various parts of the park would open some areas that presently receive small amounts of visitors, to additional hiking, climbing, caving, horseback riding, and other activities. This would increase the likelihood of visitors encountering undocumented and unprotected archeological resources. As described in Alternative B, the presence of other visitors is an excellent deterrent to inappropriate treatment of archeological resources, but some resource damage could still occur.

Proposed increased levels of staffing, education (including stewardship language in exhibits and signage), outreach, and partnering would help reduce some of the potential damage to archeological resources. Increased numbers of park staff would be proposed to patrol and provide resource protection for the enlarged number of visitor access routes and destinations where archeological resources could suffer adverse effects from looting, vandalism, or damage from horse trails.

Friends, groups, and students could serve as resource "guardians" to monitor resource conditions and to report on-going resource threats. Visitor education would help build stewardship for archeological resources, and partnering would provide needed archeological surveys and protective measures.

Increased educational, interpretive, outreach and management efforts under Alternative C would possibly **long-term, moderate, beneficial effects** on archeological resources.

All these approaches would help avoid most of the potential adverse effects due to additional access and visitor use. Implementation of Alternative C would possibly have both **long-term, moderate benefits and long-term, minor, adverse effects** on archeological resources.

Cumulative Impacts

Under Alternative C, the time period, affected area, and the loss of archeological resources in areas surrounding the park, would be the same as described in Alternative A. The potential for adverse effects from development actions, creation of new access routes/connections, and increased visitor use within the park, would be slightly greater than in Alternative A. Protective and avoidance measures included in Alternative C would help reduce the potential for adverse effects.

When the moderate adverse effects of other past, present, and future plans, projects and activities affecting archeological resources in the park and surrounding areas are combined with the moderate beneficial and minor adverse impacts under Alternative C, the resulting cumulative effects would be **long-term, moderate and adverse**. Effects would be moderate and adverse because the numbers and extent of sites affected regionally would tend to outweigh the benefits of park programs for resources within park boundaries.

Conclusions

Under Alternative C, educational, interpretive, outreach and management efforts would possibly confer **long term, moderate, beneficial effects** while effects of increased access and visitor use would possibly have result in **long-term, minor, adverse effects** on selected archeological resources. Cumulative effects would be **long-term, moderate, and adverse**.

Effects would be moderate and adverse because the numbers and extent of sites affected regionally would outweigh the benefits of park programs on resources within park boundaries.

There would be no impairment of archeological resources under Alternative C.

Impacts of Alternative A on Cultural Landscapes, Including Historic Buildings, Structures, and Districts

Laws and regulations applicable to cultural landscapes, historic buildings, structures, and districts are described in the preceding section, as is the area of potential effect and the method used to analyze potential impacts.

The method for assessing impacts on cultural landscapes, including historic buildings, structures, and districts is presented in the section entitled "Method", within the "Cultural Resources" section. For typical mitigation measures see Table 9 in Chapter 2.

Historic buildings, structures, and districts are vital components of the park's landscapes. For this reason, the following discussion will combine cultural landscapes with historic structures, buildings, and districts. Thresholds for this impact topic are presented in Table 27.

Table 27. Impact Thresholds for Cultural Landscapes, Historic Buildings, Structures and Districts Listed in or Eligible for the National Register of Historic Places

Negligible effect: The activity potentially would not cause effects to cultural landscapes, historic buildings, or districts that would alter any of the characteristics that would qualify the resource for inclusion in, or eligibility for, the National Register.
Minor adverse effect: The action would affect one or more features of a structure, building, district, or landscape, but it would neither alter its character-defining features, nor diminish the overall integrity of the property that qualify it for inclusion in, or eligibility for, the National Register.
Minor beneficial effect: The action would maintain and improve the character-defining features of the structure, building, or district in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2005).
Moderate adverse effect: The action would alter one or more character-defining features of the structure, building, district, or landscape. While the overall integrity of the resource would be diminished, the property would retain its National Register eligibility.
Moderate beneficial effect: Positive actions would be taken to preserve and noticeably enhance character-defining elements of a structure, building, or district in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 2005).
Major adverse effect: The action would alter character-defining features of a structure, building, district, or landscape, seriously diminishing the overall integrity of the resource to the point where its National Register eligibility may be questioned.
Major beneficial effect: The action would enhance the character-defining features of a structure, building, or district that represents important components of the nation's historic heritage and would foster conditions under which these cultural foundations of the nation and modern society could exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations.
Duration: Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

The park's two historic districts (Cumberland Gap and the Hensley Settlement) can also be considered potential cultural landscapes. Other areas in the park also contain elements of

cultural landscapes reflecting the Civil War, industrial development, and early settlement. Continuation of current management practices, directions, and trends at Cumberland Gap National Historical Park would have very few new impacts on cultural landscapes, buildings, structures, or districts. Throughout the park, emphasis would be on continuing restoration and preservation of the cultural (historic) landscape. However, it is unclear how much congruity there is between the old (1979) historic zones and the newly restored Gap area, or whether the cultural landscapes adequately encompass and fully express the importance of the restored areas in the park.

Historic structures and buildings within the two historic districts (Hensley Settlement and Cumberland Gap) would continue to be maintained in a manner that preserves their integrity and National Register eligibility. However, lack of funding and staff could make it difficult to keep up with structural and landscaping needs. Visitors would continue to have limited access, the ability to view historic structures, and the ability to enjoy interpretive programs on a seasonal basis.

Continuation of the various interpretive, outreach, education, and partnering programs currently underway, would aid in providing education and understanding of the park's historic resources, resulting in added appreciation and a sense of stewardship (possibly a **long- and short- term, minor to moderate benefit**). A **long-term, negligible to minor, adverse effect** on the park's cultural landscapes, buildings, structures, and districts would possibly result from lack of funding and staffing.

Cumulative Impacts

The time period included in this cumulative analysis extends from the early 1700s to the present; the area considered includes the park and immediately adjacent areas. The landscape in and near the park has changed dramatically over the past three centuries. Major changes in transportation systems have seen super highways replace traces and trails; the sounds of diesel trucks echo through the forested mountains. Modern towns and industrial plazas such as Whitmer Industrial Park and Bell County Technology and Training Park have replaced isolated cabins and crude settlements. Restoration of the Gap helped return part of the area to the way it appeared in earlier times, but much of the rest of the landscape has lost much of its integrity; these losses are expected to continue into the future.

Loss of the integrity of landscape features over time constitutes a **long-term, moderate, adverse effect** on the historical landscape surrounding the park and on some developed areas of the park itself.

When the moderate adverse effects of other past, present, and future plans, projects, and activities affecting cultural landscapes, historic structures, buildings, and districts in the park and surrounding areas are combined with the moderate benefits of Alternative A, the resulting cumulative effects would be **long-term, moderate and adverse**. Effects would be moderate and adverse because the overall extent of the changed regional landscape would tend to outweigh the benefits of the landscapes preserved within the park.

Conclusions

Continuation of the various interpretive, outreach, education, and partnering programs currently underway would aid in providing education and understanding of the park's historic resources, possibly resulting in added appreciation and a sense of stewardship (**a long- and short-term, minor to moderate benefit**). A **long-term, negligible to minor, adverse effect** on the park's cultural landscapes, buildings, structures, and districts would possibly result from

lack of funding and staffing. Cumulative effects would be **long-term, moderate, and adverse** because the overall extent of the changed regional landscape would tend to outweigh the benefits of buildings, structures, districts, and landscapes preserved within park boundaries.

There would be no impairment of cultural landscapes, historic buildings, structures and districts under Alternative A.

Impacts of Alternative B on Cultural Landscapes, Historic Buildings, Structures, and Districts

Under Alternative B, opportunities for visitor use and access to the park would be increased by the creation of larger Developed Zones, greater potential for new facilities, and increased visitor access by routes connecting different Developed Zones. New or enlarged Developed Zones in Alternative B would total more than twice the area occupied by development in Alternative A. A number of these provisions would have the potential to adversely affect cultural landscapes, so additional efforts to manage cultural and natural resources would be required to maintain resource condition and character. In addition, construction of seven new minor facilities in Developed Zones at the Hensley

Settlement, Fern Lake, and the Wilderness Road Campground would be constructed. These would potentially affect cultural landscapes, historic building, etc. (see Chapter 2 for detailed information on these projects). This would possibly constitute a **long-and short term, minor adverse effect**.

Implementation of Alternative B would have both adverse and beneficial effects on cultural landscapes, historic buildings, structures, and districts. The 35-acre increase in the size of the new Cultural Resource Zone at Hensley Settlement (when compared with the current historic zone under Alternative A) would be beneficial since it helps to maintain the surrounding landscape integrity. At Cumberland Gap the designated Cultural Resource Zone would be slightly smaller than the current historic zone, and this would have a negligible effect on the historic scene in this area.

Addition of new visitor facilities at the Hensley Settlement could have an adverse effect on this cultural landscape, so special care would be taken regarding development activity here to ensure compatibility with the historic scene. To reduce the impact of development on the adjacent Hensley landscape, the number and type of new facilities would be limited and would be built in the context of the historic district. New structures would be non-intrusive and would be compatible with the historic structures in their design, scale, massing, workmanship, association, and materials. Historic structures in the historic districts would be maintained to protect their historic features, materials, and integrity.

There would possibly be **short-term, adverse effects** of a minor nature on the vegetation during the construction phases at the Hensley Settlement and at Cumberland Gap. Vegetation chosen for replanting would accurately replicate the trees and other plants present during the period of significance regarding the historic district/cultural landscape.

New facilities at the Gap and at the Hensley Settlement would encourage additional visitation, which could result in overcrowding and congestion that would detract from the historic feeling of the area, and contribute to overuse and deterioration of historic structures. Congestion in the historic districts might be reduced by such measures as staggering the times for guided tours, but congestion could still possibly have a **minor, adverse** effect on the character of the area.

On a park-wide basis, addition of facilities such as trails, roads, and parking would increase opportunities for visitor access and use of the park and would tend to spread out visitation. While these additions and changes could potentially intrude adversely on the park's cultural landscapes, they could also help to reduce congestion at the Gap and the Hensley Settlement by offering visitors alternative choices.

Historic resources would be managed to maintain their resource condition and character. All stabilization/preservation of historic features/structures/landscapes would be conducted in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and character, in accordance with relevant Cultural Landscape Report(s) and Historic Structure Report(s). Studies to identify historic properties and assess effects would be carried out in advance of undertakings and would comply with the requirements of Sections 106 and 110 of the NHPA, 36 Code of Federal Regulations 60, 36 Code of Federal Regulations 800, and NPS Director's Order 28.

To reduce the potential adverse effects of development outside of the historic districts, new facilities would be designed to merge gently into the surrounding landscape. Vegetation would possibly suffer **short-term, adverse effects** following construction phases, but replacement plantings would reflect the historic nature of the park. New facilities at Fern Lake, the Visitor Center area, and the Wilderness Road Campground would be designed to be unobtrusive and compatible with the historic developments in the park as described above for the Hensley Settlement. Biking and hiking trails to connect the Wilderness Road Campground to the Wilderness Road and the Gap, would be included in the Developed Zone. These trails and expansion of the Developed Zone to include Pinnacle Road and Kentucky State Highway 988 from Sugar Run to the Gap area, improvement of Shillalah Creek Road, and creation of a new parking area at the base of Brush Mountain, would all be constructed in a manner that would not detract from the cultural landscape or natural scenery and would be compatible with the park's historic districts.

Under Alternative B, the levels and affects of public outreach, education, and partnering would be the same as in Alternative A. Continuation of these management strategies possibly would have **long-term, minor to moderate benefits** on cultural resources and **long-term and minor adverse** effects on cultural landscapes, buildings, structures, and districts.

Cumulative Impacts

The time period included in this cumulative analysis extends from the early 1700s to the present; the area considered includes the park and immediately adjacent areas. Cumulative effects for Alternative B would be the same as discussed in Alternative A, **long-term, moderate and adverse**.

Development adjacent to the Hensley Settlement would add a modest amount of modern parking and other facilities adjacent to the historic landscape. There would be additional changes in the park-wide cultural landscape due to the expansion of Developed Zones at the visitor center, Sugar Run, Wilderness Road Campground, Fern Lake, and other areas. However, these changes affect a small portion of the park (Figures 6 and 7; Table 6), and the contribution to cumulative effects would be minor.

When the moderate adverse effects of other past, present, and future plans, projects, and activities affecting cultural landscapes, historic structures, buildings, and districts in the park and surrounding areas are combined with the **long-and short-term, minor to moderate benefits and minor, adverse effects** of Alternative B, the resulting cumulative effects would be **long-term, moderate and adverse**. Effects would be moderate and adverse because the overall

extent of the changed area's landscape would continue to outweigh the landscapes preserved within park boundaries.

Conclusions

With measures outlined in Alternative B to reduce overcrowding and congestion, and with adherence to careful design and attention to scale, workmanship, massing, association, and materials, the potential effects of development of new park facilities on cultural landscapes, historic structures, buildings and districts at Hensley Settlement and the Gap and on other park landscapes would possibly be **long- and short-term, adverse, and minor**. Landscape vegetation would possibly suffer **short-term, minor adverse effects** following facility improvements. Continuing management strategies would have possible **long-term, minor to moderate benefits** on cultural resources. Cumulative effects would be **long-term and moderately adverse** because the adverse effects of past and on-going development regionally would continue to outweigh the benefits conferred by park protection of landscapes, structures, buildings and districts.

There would be no impairment of cultural landscapes, historic buildings, structures, and districts in Alternative B.

Impacts of Alternative C on Cultural Landscapes, Historic Buildings, Structures, and Districts

Under Alternative C, opportunities for visitor use and access would be increased by the creation of larger and more numerous Developed Zones, greater potential for new facilities, and increased visitor access routes connecting different Developed Zones. A number of these provisions would have the potential to adversely affect cultural landscapes, so additional efforts to manage cultural and natural resources would be required to maintain resource condition and character.

Installation of new facilities such as a rustic rain shelter and a composting comfort station at the Developed Zone to the Hensley Settlement would be done in a manner that would not intrude on the cultural landscape. Close attention would be paid to the design, materials, scale, workmanship, association, and massing of these new structures. Continuing maintenance of historic structures and buildings would help ensure protection of the park's historic districts and landscapes.

Historic resources would be managed to maintain their resource condition and character. All stabilization/preservation of historic features/structures/landscapes would be conducted in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties and character, in accordance with relevant Cultural Landscape Report(s) and Historic Structure Report(s). Studies to identify historic properties and assess effects would be carried out in advance of undertakings and would comply with the requirements of Sections 106 and 110 of the NHPA, 36 Code of Federal Regulations 60, 36 Code of Federal Regulations 800, and NPS Director's Order 28.

New facilities and improvements in the Developed Zone at Fern Lake would use the appropriate design principles to ensure that facilities, construction, operation, and use are compatible with existing structures, with other park facilities, and with the historic nature of the park.

Outside of the Hensley Settlement and the Gap, some potentially adverse effect on the overall park landscape would be minimized by close attention to the location and the way that facilities

are laid out on the land, and by using vegetation and the configuration and contours of the natural land forms to blend new trails, roads, parking, and other facilities imperceptibly into the landscape. Resource identification and evaluation would precede actions that could adversely affect the landscape in Alternative C, and an environmental assessment and a Cultural Landscape Report would be completed to evaluate individual impacts of actions prior to their implementation.

Increased and formalized public outreach, education, and partnering would help expand existing educational and outreach programs. Links with state and local parks would be increased, as would educational information available on the Internet. These measures would help develop public awareness of the irreplaceable nature of the park's cultural resources, and of the ways in which visitors could contribute to the preservation of the cultural landscape. These various measures would possibly have **long-term, moderate benefits** for cultural landscapes, structures, buildings and districts. It is possible that long-**term, minor, adverse effects** would result from new facilities, construction, operation, and use within the historic districts.

Cumulative Impacts

The time period included in this cumulative analysis extends from the early 1700s to the present; the area considered includes the park and immediately adjacent areas. Cumulative effects for Alternative C in the surrounding region would potentially be the same as discussed in Alternative A (**long-term, moderate and adverse**).

Alternative C proposes expansion of a number of existing Developed Zones and the addition of new areas to provide visitors with more opportunities to see and learn about the park. As described for Alternative B, measures such as use of sensitive design principles would mitigate most of the potentially adverse effects of Alternative C on the Gap and the Hensley Settlement cultural landscapes. Expansion of some Developed Zones, while using those same design principles, could help mitigate the addition of new trails, roads, and added facilities in this area. The size, configuration, and geomorphology of the park would also allow such additions and changes to the landscape to occur without an apparent visual intrusion by the new facilities. However, each new facility, new road, or new trail results, in a seemingly imperceptible manner, in a modification of the landscape. Over time, these landscape changes combine to produce a cumulative effect on the park landscape.

When the moderate adverse effects of other past, present, and future plans, projects and activities affecting cultural landscapes, historic structures, buildings, and districts in the park and surrounding areas are combined with the **long- and short-term, minor to moderate benefits and minor, adverse effects** of Alternative C, the resulting cumulative effects would be **long-term, moderate and adverse**. Effects would be moderate and adverse because the overall extent of the changed area landscape would continue to outweigh the landscapes preserved within the park boundaries.

Conclusions

Under Alternative C, increased and formalized public outreach, education, and partnering, links with state and local parks, and educational uses of the Internet would contribute to the preservation of the cultural landscape and its buildings, structures, and districts, possibly providing a **long-term, moderate benefit**. With mitigation (including resource identification, evaluation, and protection) new facilities, construction, operation, and use would possibly have a **long-term, minor, adverse effect** on the landscape, structures, buildings, and districts.

Cumulative effects would be **long-term, moderate and adverse** because the overall extent of the changed area landscape and loss of historic structures and buildings regionally, would outweigh the landscapes, structures, buildings, and districts preserved within park boundaries.

There would be no impairment of cultural landscapes, historic buildings, structures and districts under Alternative C.

Impacts of Alternative A on Ethnographic Resources, Traditional Cultural Properties, and Values

Certain important questions about human culture and history can only be answered by gathering information about the cultural content and context of cultural resources. Questions about contemporary peoples or groups, their identity, and heritage have the potential to be addressed through ethnographic resources. Typically, the term "ethnographic resources" refers to resources valued by American Indians with long-term cultural ties to a particular geographic area. Area history closely links American Indians to this region where both prehistoric and historic Indian peoples followed migratory game through the park along what would come to be known as the Warrior's Trail. This trail remains a visible reminder of that long-term historic association; legends and stories told by tribal elders recall connections to the park and surrounding area. However, consultation with concerned tribes has not identified any Traditional Cultural Properties, sacred sites, or specific tribal concerns related to Cumberland Gap National Historical Park.

Please refer to the previous section for a description of the methods applied in analysis of this topic. Thresholds for this impact topic are presented in Table 28.

Restoration of Cumberland Gap enables American Indians to better visualize the landscape as it existed in the early 1700s, and existing outreach and interpretive programs would continue to provide information about their traditional history in this area. For those descendents of the pioneers who lived in this area prior to its designation as a national park, the Hensley Settlement, and related interpretive and outreach programs, would continue to perpetuate and celebrate the historic ties these families have to the park. Continuation of existing conditions and perpetuation of solid relationships between park managers and descendents of prior inhabitants of the park would possibly have **long-term, minor, beneficial** effects to ethnographic groups.

Table 28. Impact Thresholds for Ethnographic Resources (Including Traditional Cultural Properties and Values) Listed in or Eligible for the National Register of Historic Places

Negligible effect. The action potentially would not alter either resource conditions, such as traditional access or site preservation, or the relationship between the resource and the affiliated group's body of beliefs and practices. There would be no change to a group's body of beliefs and practices.
Minor adverse effect. The action would have a slight but noticeable effect. It would not appreciably alter resource conditions, such as traditional access or site preservation, or the relationship between the resource and the affiliated group's body of beliefs and practices.
Minor beneficial effect. The action would enhance traditional access and/or accommodate a group's traditional practices or beliefs.
Moderate adverse effect. The effect of the action would be apparent and would alter resource conditions. Interference to traditional access, site preservation, or the relationship between the resource and the affiliated group's beliefs and practices would occur, even though the group's beliefs and practices would survive.

Table 28. Impact Thresholds for Ethnographic Resources (Including Traditional Cultural Properties and Values) Listed in or Eligible for the National Register of Historic Places

Moderate beneficial effect. The action would facilitate a group's beliefs and practices.
Major adverse effect. The effect of the action would alter resource conditions. Traditional access, site preservation, or the relationship between the resource and the affiliated group's body of beliefs and practices would be blocked or greatly affected, to the extent that the survival of a group's beliefs and/or practices would be jeopardized.
Major beneficial effect. The action would encourage a group's beliefs or practices.
Duration: Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

Cumulative Impacts

The time period included in this cumulative analysis stretches from the early 18th century to the present; the area considered includes the park and immediately adjacent areas. Over the years, changes in agricultural practices, settlement patterns, industry, and society in general have resulted in a highly mobile 21st century society. Over the past century in the region surrounding the park, development and industry have swept away numerous historic structures, changed land use patterns, and built new roadways. Many American Indians were moved to reservations far from their homeland and their traditional hunting grounds as Euro-Americans settled into the region. With each of these changes, associated cultural traditions have been lost.

Given these changes in American society, fewer and fewer families retain strong ties to the land or the traditional practices of their ancestors. As a result, many traces of earlier settlements and traditionally used places in the area surrounding Cumberland Gap have been lost or forgotten; it is a **long-term, moderate, adverse effect** on the region's ethnographic values. Yet, for many American Indians and descendents of area pioneers, Cumberland Gap remains a place that is remembered and cherished through the generations. Interpretive and outreach programs and the restoration of the Gap help to retain these cultural traditions, values, and memories; this is a **long-term, moderate and beneficial effect**.

When the moderate adverse effects of other past, present, and future plans, projects, and activities affecting ethnographic resources in the park and surrounding areas are combined with the moderate beneficial effects under Alternative A, the resulting cumulative effects on ethnographic resources and traditional values would be **long-term, moderate and adverse**. Effects would be adverse because regional and national changes in traditional ways of life would be expected to continue into the future, further diminishing these cultural traditions.

Conclusion

Continuation of existing conditions would possibly have **long-term, moderate benefits** for ethnographic groups through the preservation of cultural traditions and valued places in the park. Cumulative effects would possibly be **long-term, moderate and adverse** because of the continuing loss of cultural traditions regionally and nationally.

Under Alternative A, there would be no impairment of ethnographic resources or traditional values.

Impacts of Alternative B on Ethnographic Resources, Traditional Cultural Properties, and Values

Under Alternative B, establishment of Cultural Resource Zones would have the potential for a **negligible effect** on American Indian ethnographic resources and values. Opportunities for Developed Zones and expansion of new visitor facilities in the park (roads, trails, etc.) would increase the potential for encountering archeological sites related to prehistoric and historic human use of this area. Presently, no traditional cultural sites have been formally defined in the park. Because some tribes may be uncomfortable with archeological investigations of sites that possibly could be related to their historic occupation of this area, construction and operation of park facilities could have a possible **negligible to minor, adverse effect** on ethnographic values. On the other hand, development of roads, trails, and other facilities would be a benefit to some tribal members who come here as visitors.

A similar scenario exists for the descendents of the area's early settlers. Some may feel that proposed development of roads, trails, and other visitor facilities would be inappropriate because the facilities could alter the landscape and change places on the land that they remember. But others would appreciate the preservation of and the access to the Hensley Settlement and interpretation of pioneer life at the park, understanding that the Hensley Settlement would continue to give their children and grandchildren a deeper awareness of the past that their ancestors created here. Perpetuation of existing solid relationships between park managers and descendents of prior inhabitants of the park would have possible **long-term, beneficial** effects to ethnographic groups.

Continuation of the various interpretive, outreach, education, and partnering programs currently underway would aid in providing education and understanding of the park's ethnographic resources. Under Alternative B, there would possibly be **long-term, minor, adverse and moderate, beneficial effects** on ethnographic resources.

Cumulative Effects

The time period included in this cumulative analysis stretches from the early 18th century to the present; the area considered includes the park and immediately adjacent areas. Cumulative effects for the area surrounding the park would be the same as described for Alternative A. Within the park, there could be modest changes in remembered places, but park programs and outreach, combined with continued preservation of the Hensley Settlement would help to retain cultural traditions, values, and memories; this would be a potentially **long-term and moderate, beneficial effect**.

When the moderate, adverse effects of other past, present, and future plans, projects and activities affecting ethnographic resources in the park and surrounding areas are combined with the moderate beneficial effects under Alternative B, the resulting cumulative effects on ethnographic resources and traditional values would possibly be **long-term, moderate and adverse**. Effects would be adverse because regional and national changes in traditional ways of life would be expected to continue into the future, further diminishing local cultural traditions.

Conclusions

Under Alternative B, there could possibly be **long-term, minor, adverse effects** on ethnographic resources due to new facility construction, operation, and use, but **long-term, moderate beneficial effects** on ethnographic resources would possibly also result in providing better access to remembered and valued places and by continuing interpretation of traditional cultural resources and practices.

Cumulative effects on ethnographic resources and traditional values would be **long-term, moderate and adverse**. Effects would be adverse because regional and national changes in traditional ways of life would be expected to continue into the future, further diminishing local cultural traditions.

Under Alternative B, there would be no impairment of ethnographic resources or traditional values.

Impacts of Alternative C on Ethnographic Resources, Traditional Cultural Properties, and Values

Under Alternative C, negligible effects on American Indian ethnographic resources and values would result from the establishment of Cultural Resource Zones (at present, no traditional cultural places have been defined within the park). Expansion of new visitor facilities such as roads, trails, and Developed Zones in the park would increase the potential for encountering archeological sites valued by tribes, which would possibly result in a **minor, adverse** effect on ethnographic values. Development of roads, trails, and other visitor facilities would be considered beneficial by some tribal members who come here as visitors. Perpetuation of existing solid relationships between park managers and descendents of prior inhabitants of the park would possibly have **long-term, beneficial** effects to ethnographic groups.

Increases in new facility construction, operation, and use could have both benefits and adverse effects on ethnographic values held by descendents of the area's early settlers. Minor adverse effects could result from the proposed development of new visitor facilities that could change the appearance of the landscape or familiar places. Preservation and continuing interpretation of the Hensley Settlement and interpretation of pioneer life here would continue to give traditional groups and their children an understanding of the pioneer life of their ancestors; this is a possible **long-term, moderate, and beneficial** effect.

Expansion of the various interpretive, outreach, education, and partnering programs currently underway would aid in providing education and understanding of the park's ethnographic resources. Under Alternative C, there would possibly have **long-term, minor, adverse and moderate beneficial** effects on ethnographic resources.

Cumulative Effects

The time period included in the cumulative analysis, the area considered, and the adverse or beneficial effects on ethnographic resources and values would be the same as described for Alternative B (**long-term, moderate and beneficial**). However, because of the slightly increased potential for new facility construction, operation, and use under Alternative C, there could be a few changes in remembered places for both tribes and descendents of area pioneers; a minor adverse effect. Park programs and outreach, combined with continued preservation of the Hensley Settlement, would help to retain cultural traditions, values, and memories, a **long-term, moderate benefit**.

When the moderate adverse effects of other past, present, and future plans, projects and activities affecting ethnographic resources in the park and surrounding areas are combined with the moderate beneficial effects and minor adverse effects under Alternative C, the resulting cumulative effects on ethnographic resources and traditional values would be **long-term, moderate and adverse**. Effects would be adverse because regional changes in traditional ways of life would be expected to continue into the future, further diminishing these cultural traditions.

Conclusions

Expansion of the various interpretive, outreach, education, and partnering programs currently underway would aid in providing education and understanding of the park's ethnographic resources. Under Alternative C, there would possibly be **long-term, minor, adverse and moderate beneficial effects** on ethnographic resources.

When the moderate adverse effects of other past, present, and future plans, projects and activities affecting ethnographic resources in the park and surrounding areas are combined with the moderate beneficial effects and minor adverse effects under Alternative C, the resulting cumulative effects on ethnographic resources and traditional values would be **long-term, moderate and adverse**.

Under Alternative C, there would be no impairment of ethnographic resources or traditional values.

SECTION 106 ASSESSMENT

Two action alternatives (B and C) and the No Action Alternative—Alternative A are contained in this draft general management plan/environmental impact statement. The action alternatives represent differing scenarios for the management of Cumberland Gap National Historical Park over the next 15 to 20 years. These alternatives were developed to present viable solutions to issues identified in Chapter 1.

This section assesses the effects of the alternatives according to the requirements of Section 106 of the National Historic Preservation Act. The method for conducting this assessment is summarized in the section entitled "Section 106 Method" for Cultural Resources. This section also outlines a series of best management practices that would help avoid adverse effects on cultural resources. Significant cultural resources would be managed to protect values in accordance with NPS Management Policies (2006a) and Director's Order 28: Cultural Resource Management (1998c).

Archeological Resources

As of August 2008, the NPS Archeological Sites Management Information Systems contained entries for 136 archeological sites in the park. Of the known sites, 92 are in Kentucky, 9 are in Tennessee, and 35 are in Virginia. In the last five years, most of the sites have been re-located and examined for condition issues. Currently, 116 are listed in Good condition, 5 in Fair condition, and 6 in Poor condition. Nine others have not been checked. Most of the sites have been photographed and recorded with a GPS. It should be noted there are several sites currently classified as "potential" that may be added once they have been found and verified. Also, additional entries are expected once the results of projects conducted during FY2008 are available.

Only a minute portion of the park has ever been examined beyond the cursory pedestrian level so the depth of information is limited. The majority of the sites are historic because these tend to have visible surface features and/or artifacts, whereas very few surveys have been conducted using methodologies that detect prehistoric sites. The list includes 57 domestic sites such as house and farmsteads, generally occupied during the early 20th century. There are also several manufacturing sites such as a brewery and coal processing facility. At least three coal mines have been identified. Transportation-related resources include three railroads and six roads. As for the Civil War, the database currently includes four camps, six forts, nine rifle pits, seven batteries and several other related sites. Smaller categories of historic sites include a school, hotels and a tavern. Prehistoric sites include ten rockshelters

and caves, plus three other sites. Wherever new construction is proposed in the park, the area of potential effect would be inventoried and resources would be evaluated for National Register eligibility. Fern Lake and its watershed would be inventoried in the future and its resources would be evaluated to ensure that resources are not inadvertently damaged by visitor use or facility construction, operation, and use.

Alternative A would not involve establishment of updated cultural resource zones within the park, and thus would not result in the best possible management strategy for cultural sites. Two Cultural Resource Zones are proposed for each of the two action alternatives (B and C). These Cultural Resource Zones would encompass cultural resources within the Cumberland Gap and Hensley Settlement historic districts. These Cultural Zones would have a good potential for inventory, preservation, and protection of archeological sites. Generally, development and recreational activities would be situated in areas lacking archeological resources, or where sites could accommodate use without damage. New facilities such as parking and a rustic composting comfort station would be added at the Hensley Settlement to accommodate visitor use. Educational experiences would encourage stewardship.

Significant cultural resources would be managed to protect values in accordance with NPS Management Policies (2006) and Director's Order 28. Development of resource stewardship strategies and a collections management plan would aid the park in identifying and managing their resources more effectively by establishing priorities and schedules for resource treatment and by defining measures for site maintenance protection, and preservation, both within and outside of the Cultural Resource Zones.

Once planning for improvements under the preferred alternative has begun, an appropriate site-specific environmental document (possibly an environmental assessment) would be developed to address potential impacts on cultural sites. Section 106 compliance would be included as part of or along with the development of this environmental document.

Conclusions

In accordance with Section 106 of the National Historic Preservation Act and the 2008 programmatic agreement between the Advisory Council and the NPS, effects on archeological resources cannot be accurately assessed based on the general description of desired future conditions developed in this general management plan. Future implementation of projects outlined in this plan will involve additional Section 106 and National Environmental Policy Act compliance. The resulting National Environmental Policy Act Section 106 documents will contain more details on the specific projects and their effects on archeological resources as well as consultation with the three state historic preservation officers (Virginia, Kentucky, and Tennessee). Both action alternatives would therefore have the potential for **adverse** effects on historic properties.

Under both action alternatives, past and continuing effects of development and other factors outside the park would contribute to having **adverse** cumulative effects on archeological resources now and in the future.

Cultural Landscapes, Buildings, Structures, and Districts

At Cumberland Gap, the park's historic structures and sites are among the most important elements in the two potential cultural landscapes. While none of the landscapes at Cumberland Gap National Historical Park have been formally inventoried or designated as cultural landscapes, two historic areas of the park, the Hensley Settlement and Cumberland Gap Historic District, include many characteristics of a cultural landscape. Thirty-five structures

within the Hensley Settlement have been designated as the Historic District, which is eligible for the National Register of Historic Places. Cumberland Gap Historic District includes both structures and sites. Numerous other sites and structures within the park are listed on or are eligible for the National Register of Historic Places.

Hensley Settlement consists of a community of 12 scattered farmsteads situated on an isolated plateau on Brush Mountain, first carved out of the wilderness during the 1800s and expanded by the Hensley and Gibbons families during the early 1900s. The cultural landscape at Hensley includes the buildings described above, as well as other landscape elements such as trails, meadows, native vegetation, spatial organization, transportation routes, and scenic mountain viewsheds. The strategic and isolated location of the settlement contributes to the landscape.

The Cumberland Gap Historic District forms a second potential cultural landscape within the park. This landscape was shaped by the geology of the area, native vegetation, and the associated landforms and spectacular viewsheds. For more than three centuries, human use of the Gap added transportation corridors, Civil War facilities, a variety of structures and landscape, and vegetation features, resulting in major changes to the original historic scene viewed by Daniel Boone and other Long Hunters. Recent removal of intrusive modern facilities and the restoration of the Gap, returned the overall area to the approximate historic setting/cultural landscape visible during the period from 1780 to 1810, and helped preserve historic resources at Civil War sites.

Under Alternatives B and C, the majority of the park's historic structures and buildings would be included within two Cultural Resource Zones that encompass the historic districts described in Chapter 3. Various mitigating measures would be implemented that would reduce the potential effects of constructing new facilities proposed in the action alternatives on these potential cultural landscapes, historic structures, buildings, and districts. These measures would include survey, analysis, and development of protective measures for cultural resources early in project development. Careful attention would be given to the compatibility of new facilities with the historic scene, including concern for design, size, scale, massing, workmanship, association, materials, and feeling. By development of mitigation measures such as use of vegetation and natural landscape contours to mask modern facilities, the intrusiveness of new or improved roads, trails, parking, and other visitor facilities would be reduced.

Conclusions

In accordance with Section 106 of the National Historic Preservation Act and the 2008 programmatic agreement between the Advisory Council and the NPS, effects on cultural landscapes, buildings, structures, and districts cannot be accurately assessed based on the general description of desired future conditions developed in this general management plan. Future implementation of projects outlined in this plan will involve additional Section 106 and National Environmental Policy Act compliance. The resulting National Environmental Policy Act Section 106 documents will contain more details on the specific projects and their effects on historic properties as well as consultation with the three state historic preservation officers (Virginia, Kentucky, and Tennessee). Both action alternatives would therefore have the potential for **adverse** effects on cultural landscapes, buildings, structures, and districts.

Under both action alternatives, past and continuing effects of development and other factors outside the park would contribute to having **adverse** cumulative effects on cultural landscapes, buildings, structures, and districts now and in the future.

Under Alternative B, historic resources (cultural landscapes, buildings, structures, and districts) would be managed to maintain their resource condition and character. Special studies would aid in their management, and new facilities would be designed to merge gently into the surrounding landscape as well as being compatible with existing facilities. Although the number of new facilities would be limited, the increased size of the Cultural Resource Zone under Alternative B would enable the park to better define and focus management efforts to preserve important cultural resources.

Implementation of Alternative C would provide increased and formalized public outreach, partnering, and educational programs, and result in expansion and enhancement of existing programs. There would be slightly more facilities under Alternative C than under Alternative A (or B), possibly resulting in increased visitor use, which could, in turn, increase the potential for damage to cultural sites. However, other provisions of Alternative C, such as avoidance of cultural resources when choosing facility sites, and increased communication and education opportunities would help to effectively balance resource protection with increased visitor use. Increased public awareness and attention to cultural resources would help reduce the potential effects of Alternative C, on cultural landscapes, historic buildings, structures, and districts.

Under both action alternatives, past and continuing effects of development and other factors outside the park would contribute to **adverse, cumulative effects** on cultural landscapes and historic resources, now and in the future.

Ethnographic Resources

Usually the term "ethnographic resources" refers to resources valued by American Indians with longterm cultural ties to a particular geographic area. Area history closely links American Indians to this region, but consultation with concerned tribes has not identified any Traditional Cultural Properties, sacred sites, or specific tribal concerns related to the park.

In this document, the term "ethnographic resources" is also used to refer to a special community of people, including the descendents of the original settlers, who have a shared identity and close relationship to the park. Despite having been physically relocated outside the park, this ethnographic community continues to assign significance to remembered places and lifestyles. They regularly come to the park for reunions and have a continuing interest in the management of park resources.

Under the action alternatives, establishment of Cultural Resource Zones would not have an effect on historic properties/ethnographic resources. Construction, operation, and use of a few new visitor facilities would increase the potential for encountering archeological sites related to prehistoric and historic human usage of the area and which may be valued by some groups. However, development of roads, trails, and other visitor facilities would also benefit tribal members who may come here as visitors.

A similar scenario exists for the descendents of the area's early settlers; e.g., development could alter remembered landscapes and familiar places. On the other hand, preservation of the Hensley Settlement and enhanced interpretation of pioneer life at the park would continue to give the descendent's children and grandchildren a deeper awareness of the past their ancestors created here.

The various interpretive, outreach, education, and partnering programs planned under the action alternatives aid in providing education and an understanding of the park's ethnographic resources.

Conclusions

In accordance with Section 106 of the National Historic Preservation Act and the 2008 programmatic agreement between the Advisory Council and the NPS, effects on ethnographic resources cannot be accurately assessed based on the general description of desired future conditions developed in this general management plan. Future implementation of projects outlined in this plan will involve additional Section 106 and National Environmental Policy Act compliance. The resulting National Environmental Policy Act Section 106 documents will contain more details on the specific projects and their effects on ethnographic resources as well as consultation with the three state historic preservation officers (Virginia, Kentucky, and Tennessee). Both action alternatives would therefore have the potential for **adverse** effects on ethnographic resources.

Under both action alternatives, past and continuing effects of development and other factors outside the park would contribute to having **adverse** cumulative effects on ethnographic resources now and in the future.

Both action alternatives would benefit ethnographic resources through preservation of traditional places and resources. However, changes in the historic districts, and new visitor facilities proposed under Alternatives B and C could be viewed by some members of ethnographic groups as a negative action, while others would welcome the preservation of and access to traditional places like the Hensley Settlement.

Compliance

This general management plan/environmental impact statement was sent to the Kentucky, Virginia, and Tennessee State Historic Preservation Officers, Tribal Historic Preservation Officers, and affiliated American Indian tribes for their review and comment (a listing of these tribes is contained in the "Consultation and Coordination" section of this document). A list of other government, non-government organizations and other interested parties is provided in Chapter 6.

The 2008 programmatic agreement provides a practical approach to compliance with Section 106 for implementation of specific proposals in the general management plan, and defines which individual actions are programmatic exclusions and which will require review. An environmental assessment or other appropriate site specific environmental compliance document would be prepared prior to implementation of any actions described in this general management plan/environmental impact statement that would affect historic properties. As these specific actions are defined and detailed project-specific Section 106 and National Environmental Policy Act documents are developed, consultation with state historic preservation officers, tribal historic preservation officers, federally recognized tribes, other stakeholders, and the public would be conducted,

SOCIOECONOMICS

Regulations and Policies

Regulations and policies that guide NPS actions with respect to socioeconomics are summarized in the "Service-wide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

Socioeconomic issues tied to management actions proposed in this plan include: those related to increasing the levels of partnering and outreach to raise awareness of the park and secondarily draw

more people to the area; and conducting additional outreach and educational activities. Major assumptions used in the analysis of effects on socioeconomics were: (1) an increase in visitation at the park or an increase in length of stay at the park would benefit the economy of the tri-state area due to increased spending by visitors for food, lodging, and other goods; (2) construction activities at the park would benefit the economy of the tri-state area by utilizing area contractors and building suppliers; (3) an increase in partnering, outreach, and education by the park would benefit the economy of the tri-state area by making more people aware of the park and its features; this would attract more visitors to the park and to the area; and (4) significant increases in park spending or visitation at the park could result in increased employment and population in the tri-state area.

This impact topic addresses the effects of implementing the alternative management strategies on the socioeconomics of the area, including population, employment, and tourism. The geographic area of influence analyzed for possible effects on socioeconomics includes the tri-state area surrounding the park. As the general management plan alternatives are conceptual in nature, the analysis of anticipated effects will be qualitative, rather than quantitative. Thresholds for this impact topic are presented in Table 29.

Table 29. Impact Thresholds for Socioeconomics

Negligible: No effects would occur or the effects to socioeconomic conditions would be below the level of detection.	
Minor: The effects to socioeconomic conditions would be detectable. If mitigation were needed to offset potential adverse effects, it would be simple and successful.	
Moderate: The effects to socioeconomic conditions would be readily apparent. If mitigation is needed to offset potential adverse effects, it could be extensive, but would most likely be successful.	
Major: The effects to socioeconomic conditions would be readily apparent and would cause substantial changes to socioeconomic conditions in the region. Mitigation measures to offset potential adverse effects would be extensive and their success could not be guaranteed.	
Duration:	Long-term: Effects last more than 1 year. Short-term: Effects last less than 1 year.

Impacts of Alternative A

Under Alternative A, the only future construction proposed in the park would be a composting comfort station at Fern Lake. Therefore, there would be limited new facilities to attract additional visitors to the park and to the tri-state area.

Under Alternative A, acquisition of the Fern Lake watershed would be completed by the NPS, and it is anticipated that Fern Lake would be opened for visitor use in the future. This could result in increased visitation to this area of the park, with potential minor socioeconomic benefits to local communities as more visitors would have the potential to spend more money in the area.

Continuation of existing levels of education and outreach would occur under Alternative A. The existing levels of informal partnering with caving groups, educational institutions, Daughters of the American Revolution, Wilderness Road State Park, and other organizations would also be maintained. Nature and cultural fairs would continue to draw thousands of people to the park and area every year. These continued activities would have **short-term and long-term, moderate, beneficial effects** on the socioeconomic conditions in the area and region.

The overall effect of continued management practices under Alternative A on socioeconomics would be **long- and short-term, moderate and beneficial**.

Cumulative Impacts

Under Alternative A, the cumulative effects on socioeconomics would be influenced by park actions, as well as by activities outside the park. Within the park, previous projects such as the Wilderness Road preservation project, the Daniel Boone visitor contact center, Hensley Settlement restoration, Civic Park improvements, the rehabilitation of the main visitor center, the Wilderness Road Campground improvements, and the restoration of Gap Cave would continue to benefit the regional economy by providing improvements to the park that would encourage visitors to return, attract additional visitors, and potentially encourage a longer stay in the park.

Outside of the park, the Wilderness Road State Park, Pine Mountain State Park, and Natural Tunnel State Park have benefited the regional economy by attracting visitors to the area. However, removal of U.S. 25E and construction and operation of the tunnel has resulted in the diversion of traffic away from the town of Cumberland Gap. The park has also cooperated with the town to help address this reduction in local tourism through use of appropriate signage along U.S. 25E. By providing a short cut between I-81 and I-75, the multi-laning of U.S. 25E has benefited the local economy by attracting motorists into the tri-state area. Relocation of the Glacier Girl exhibit could adversely affect the regional economy since visitors who previously came to see the exhibit may no longer come to Middlesboro and/or the park.

The three business parks listed in "Cumulative Impact Analysis" section of Chapter 4—Bell County Technology and Training Park and Lee County Industrial Park— would benefit the regional economy in the future by encouraging new businesses to locate into the tri-state area and by supplying new jobs to area residents. The proposed Pine Mountain Historical Trail could also attract new visitors to the area that could benefit the regional economy if they return in the future and vacation in the area. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting socioeconomics are combined with actions under Alternative A, the resulting regional cumulative effects would be **long-and short-term, moderate and beneficial**.

Conclusions

The overall regional effect of continued management practices under Alternative A on socioeconomic conditions would be **long- and short-term, moderate and beneficial**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting socioeconomics are combined with actions under Alternative A, the resulting cumulative effects would be **long-and short-term, moderate and beneficial**.

Impacts of Alternative B

Alternative B would also feature expansion of the Developed Zones as compared to Alternative A. This could potentially result in the construction and operation of a few new facilities in Developed Zones at Fern Lake, Hensley Settlement, and in the vicinity of the Wilderness Road Campground. These facilities could potentially include comfort stations, visitor contact stations, picnic facilities, unpaved trails, limited paved roads, and paved parking areas. Parking areas and additional roadways could also be added at the Hensley Settlement in the new Developed Zone. Other potential improvements could include shelters, kiosks, limited paved parking areas, limited paved access roads, picnic tables, and comfort stations. Construction of these facilities would have a **short-term, minor, beneficial effect** on the local economy associated with providing local construction jobs (if hired locally) as well as workers spending money in the local communities.

Operation of the new facilities could attract more visitors to the park, as well as to the tri-state area, and visitors would spend money in the local marketplace. Fern Lake would be open to visitors with opportunities for fishing and non-motorized boating/electric trolling motor boating. Appropriate activities in the area surrounding the lake would include hiking, picnicking, horseback riding, and other outdoor activities that could attract new visitors to the park, with resulting benefits to the local economy. Because the new facilities would be minor and few in number, however, the overall effect of Alternative B on socioeconomics would be **long-term, minor, and beneficial**.

The expanded Developed Zone at the Hensley Settlement would provide an opportunity for concessions to provide wagon rides and additional guided tours, which would have a **long-term, minor, and beneficial** effect on the local economy in the future.

Under Alternative B, partnering, education, and outreach would remain at current levels as described in Alternative A. This would have a **long-term, moderate, beneficial effect** on the economy of the Middlesboro area by drawing visitors to the park for major events such as cultural fairs. .

It is estimated that Alternative B would require approximately four additional (full-time equivalent) park employees to assist with increased management needs at Fern Lake and the Hensley Settlement. Depending on the expertise required, these additional positions would either be filled locally or would be transferred in from other parks, or be new hires to the NPS. This would provide a **long-term, negligible, beneficial effect** on the local economy.

The overall effect of management actions proposed under Alternative B on socioeconomics would be **long-and short-term, moderate, and beneficial**.

Cumulative Impacts

The new facilities that would be constructed and operated under Alternative B would be of limited size and few in number. Economic gain to the local area and region would, therefore, be minor. Therefore, the cumulative effects of Alternative B are estimated to be similar to those described in Alternative A. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting socioeconomics are combined with actions under Alternative B, the resulting cumulative effects would be **long-and short-term, moderate and beneficial.**

Conclusions

The overall effect of Alternative B on socioeconomics would be **long- and short-term, moderate, and beneficial.** When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting socioeconomics are combined with actions under Alternative B, the resulting cumulative effects would be **long-and short-term, moderate and beneficial.**

Impacts of Alternative C, the Preferred Alternative

As compared to Alternative A, Alternative C would provide for larger and more numerous Developed Zones, increased potential for new facilities, and increased visitor access. This would increase the potential for providing local and regional economic benefits associated with construction and operation of these new facilities. In addition, 11 new minor facilities in Developed Zones at the Hensley Settlement (including the base of Brush Mountain), Fern Lake, and the Wilderness Road Campground would be proposed for construction. These construction activities would result in **short-term, minor, beneficial economic effects** (see Chapter 2 for detailed information on these potential projects).

Operation of the new facilities could attract more visitors to the park, as well as the tri-state area, and the visitors would be expected to spend money in the local market over the long- and short-term. This would result in **long-term, minor, beneficial economic effects on the local economy.**

The expanded Developed Zone at the Hensley Settlement would provide an opportunity for concessions to provide wagon rides and additional guided tours, which would have a **long-term, minor, and beneficial** effect on the local economy in the future.

Education and outreach programs would be expanded as well as the potential for more special events as compared with Alternative A. The park may choose to host additional events or programs for example at Fern Lake and the Hensley Settlement. Opportunities to visit Fern Lake may bring new visitors or increase the length of stay at the park. This could result in more overnight stays and increased spending in the communities near the park. Partnering opportunities, including formal partnering programs, would also be expanded under Alternative C. Examples of potential partnerships include the Cave Research Foundation and trail organizations. This could result in a **long-term, minor, beneficial effect** on the local economy of local communities through increased visitation.

It is estimated that Alternative C would require approximately 7.2 additional (full-time equivalent) employees. Four of these new employees would assist with management activities at Fern Lake and 3.2 full-time equivalent employees would be utilized to provide additional interpretation functions. Depending on the expertise required, these additional positions would either be filled locally, would be transferred from other parks, or be new NPS hires. This would result in a **long-term, negligible, beneficial effect** on the local economy.

The overall effect of management actions proposed under Alternative C on socioeconomics would be **long- and short-term, negligible to moderate and beneficial**.

Cumulative Impacts

The cumulative effects of management actions taken under Alternative C on socioeconomics would be similar to those associated with Alternative B, except that Alternative C would result in a slightly greater potential for local and regional economic benefits. These would result from the larger Developed Zone in Alternative C than is relegated in Alternative A, and the construction and operation of 11 new minor facilities. Alternative C would also feature expanded education, outreach, and partnering programs. Together, these actions would result in increased visitor use, and a potential increase in the length of visitation in the park. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting socioeconomics are combined with actions under Alternative B, the resulting cumulative effects would be **long-and short-term, moderate and beneficial**.

Conclusions

The overall effect of Alternative C on socioeconomics would be **long- and short-term, negligible to moderate and beneficial**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting socioeconomics are combined with actions under Alternative C, the resulting cumulative effects would be **long-and short-term, moderate and beneficial**.

VISITOR USE AND EXPERIENCE

Regulations and Policies

Regulations and policies that guide NPS actions with respect to visitor use and experience are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

During scoping, the desire for identified for increased visitor access to important resources within the park and to nearby resources outside the park, while simultaneously protecting resources was identified as an issue. In addition, a need for increasing visitor safety on hiking trials by providing guided tours was also identified as an issue. Areas identified for providing increased access include the Hensley Settlement, mountain top areas, trails, and Fern Lake. Access in the park could be expanded through construction of additional facilities, including roads, horse trails and accommodations at the campground, bicycle and hiking trails, and satellite/trailhead parking areas, and visitor contact stations. Signage for roads and trails could be improved. The increased use of concessioners and NPS guided tours is also a means of providing additional access. To address these issues, a qualitative assessment of the effects of projected park actions on visitor use and experience was made, and the effects were compared to Alternative A. In addition, information on visitor use and experience was evaluated based on the professional judgment of NPS staff. Issues considered for visitor use and experience included features and facilities at the park, anticipated number of visitors, time spent at the park, opportunities for interpretation, opportunities for visitor contact, and accessibility. The geographic area of influence to be analyzed for possible effects on visitor use and experience includes the entire park. Boundaries for the cumulative impacts analysis are also set to correspond to the park boundary since visitor use and experience is primarily defined by actions within the park.

Major assumptions used in the analysis of effects on visitor use and experience include: (1) that under Alternative A, the existing management program for visitor use and experience would be extended into the future, and few or no new programs for visitors would be planned and implemented; (2) that under Alternative A, access to Fern Lake would be provided to visitors, but would be limited because of lack of facilities (however, four full time equivalent employees would be added under Alternative A to accommodate needs at Fern lake and the Hensley Settlement); (3) that access to Fern Lake and additional programs and features would be desirable to visitors, would attract additional visitors to the park, and would encourage visitors to remain in the park longer; and (4) that an increase in partnering, outreach, and education by the park would provide a greater awareness of the park and its features, which would attract more visitors to the park.

Impact thresholds used for estimating the intensity of different types of effects on visitor use and experience are presented in Table 30.

Table 30. Impact Thresholds for Visitor Use and Experience
Negligible: Visitors would not be affected, or changes in visitor experience and/or understanding would be below or at the lowest level of detection. Visitors are not likely be aware of the effects associated with the alternative. Accessibility for individuals with disabilities would not be affected, or the effects would not be noticeable or measurable.
Minor: Changes in visitor experience and/or understanding would be detectable, although the changes would be slight. Visitors could be slightly aware of effects associated with the alternative. Changes to reduce or increase accessibility would be noticeable, but would affect a small portion of the individuals with mobility-related disabilities who use the park.
Moderate: Changes in visitor experience and/or understanding would be readily apparent.

Visitors would be aware of the effects associated with the alternative and would most likely be able to express an opinion about the changes. Changes to reduce or increase accessibility would be readily apparent to many individuals with mobility-related disabilities who use the park.
Major: Changes in visitor experience and/or understanding would be readily apparent and would have important consequences. Visitors would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes. The effects on accessibility would be readily apparent to most individuals with mobility-related disabilities who use the park and would substantially change their ability to access and experience park features and resources.
Duration: Long-term: Changes would be recognized for more than one year. Short-term: Changes would be recognized for less than one year.

Impacts of Alternative A

Under Alternative A, there would be limited new facilities or features to attract additional visitors to the park. Other than a new composting comfort station at Fern Lake, no other new facilities would be constructed. Limited access to Fern Lake, lack of parking and access to Hensley Settlement, and lack of parking at Chadwell Gap Trailhead could continue to constrain visitor use and experience in these areas to some degree. Guided hiking tours would not be provided, except for NPS-guided tours of the Hensley Settlement as well as guided tours of Gap Cave. Some increase in visitation is expected at Fern Lake in the future because it would be opened for visitor use. This would be an improvement in the visitor's experience in this newly acquired part of the park.

Construction of the Cumberland Gap tunnel diverted traffic from the old route through the Cumberland Gap and enabled the restoration of the Wilderness Road. This, combined with the Daniel Boone visitor contact center, has resulted in increased numbers of visitors to the park, especially during nature and cultural fairs, typically attended by over 40,000 people from the area and region.

Continuation of existing levels of education and outreach would maintain current levels of visitor exposure to the park, with the likelihood that visitation levels by students and organized groups would remain at, or near their existing levels. Existing levels of informal partnering with caving groups, educational institutions, Daughters of the American Revolution, Wilderness Road State Park, and other organizations would be maintained. The overall effect of Alternative A on visitor use and experience would be **long-term, minor and beneficial** to those visitors who do not wish to see any changes in the park, and **long-term, moderate and adverse** to those who prefer more opportunities for a variety of experiences, partnerships, and access.

Cumulative Impacts

Under Alternative A, the cumulative effects on visitor use and experience would continue to be influenced by park management actions. Past projects described in Chapter 2 attracted additional visitors to the park and encouraged a longer stay in the park, and would be expected to continue to do so in the future. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting visitor use and experience are combined with actions under Alternative A, the resulting cumulative effects on visitor use and experience would be **long-and short-term, moderate to major, and beneficial.**

Conclusions

The overall effect of Alternative A on visitor use and experience would be **long-term, minor and beneficial** to those visitors who do not wish to see any changes in the park, and **long-term, moderate**

and adverse to those who prefer more opportunities for a variety of experiences, partnerships, and access.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting visitor use and experience are combined with actions under Alternative A, the resulting cumulative effects would be **long- and short-term, moderate to major, and beneficial**.

Impacts of Alternative B

As compared to Alternative A, Alternative B would provide for larger and more numerous Developed Zones, greater potential for new facilities, and increased visitor access. In addition, construction of seven new minor facilities in Developed Zones at the Hensley Settlement, Fern Lake, and the Wilderness Road Campground would be constructed, and would potentially affect visitor experience (see Chapter 2 for detailed information on these projects).

Construction and operation of new facilities in these areas would have a **long-term, moderate, beneficial effect** on visitor experience by providing limited new ways to enjoy the park. New facilities could potentially include comfort stations, visitor contact stations, picnic facilities, unpaved trails, limited paved roads, and paved parking areas. Visitor use at Fern Lake by the public for fishing and non-motorized boating/electric trolling motor boating would be increased. The area surrounding the lake would also allow visitors hiking, picnicking, horseback riding, and other outdoor opportunities.

The three new facilities in Developed Zones at the Hensley Settlement would improve the quality and diversity of the visitor's experience by providing new interpretive exhibits, additional parking, and increased access for hikers and horseback riders in this area of the park. The expanded Developed Zone at Hensley Settlement could also provide the opportunity for concessioners to provide wagon rides and additional guided tours. Parking and additional roadways could also be added. Other potential new facilities could include shelters, kiosks, limited paved parking areas, limited paved access roads, picnic tables, and comfort stations. The recreational vehicle capacity of the Wilderness Road Campground would be increased by adding one additional electrical loop, providing a benefit to visitors.

Partnering, education, and outreach would remain at current levels as described in Alternative A. The effects on visitor experience would be similar to Alternative A.

New facilities and programs would add to the comfort and convenience of many visitors and would also add to the visitor's understanding of the park's features and significance. This could attract more visitors to the park and they may spend more time at the park as compared to Alternative A. The overall effect of Alternative B on visitor use and experience park-wide would be **long-term, moderate to major, and beneficial** to those who prefer more opportunities for a variety of experiences, partnerships, and access. For those visitors who do not wish to see any changes in the park, the effects would be **long-term, moderate, and adverse**.

Cumulative Impacts

Cumulative effects of management actions proposed under Alternative B on visitor experience would be similar to those described for Alternative A, except that implementation of Alternative B would result in improvements in access and use of the park by visitors as a result of the construction and operation of a few limited additional facilities. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting visitor experience are combined with actions under Alternative B, the resulting cumulative effects would be **long-and short-term, major, and beneficial**.

Conclusions

The overall effect of Alternative B on visitor use and experience park-wide would be **long-term, moderate to major, and beneficial** to those who prefer more opportunities for a variety of experiences, partnerships, and access. For those visitors who do not wish to see any changes in the park, the effects would be **long-term, moderate, and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting visitor experience are combined with actions under Alternative B, the resulting cumulative effects would be **long-and short-term, major, and beneficial**.

Impacts of Alternative C, the Preferred Alternative

As compared to Alternative A, Alternative C would provide for larger and more numerous Developed Zones, greater potential for new facilities, and increased visitor access compared to Alternative A. In addition, construction of 11 new minor facilities in Developed Zones at the Hensley Settlement, the base of Brush Mountain, Fern Lake, and the Wilderness Road Campground would be proposed for construction. The effects of these actions on visitor experience would be similar to Alternative B, except that Alternative C would provide slightly added improvements in the quality and diversity of the visitor experience. In addition, education and outreach programs would be expanded; more than in Alternative A. Formal partnering programs would be developed with caving groups and other groups in Alternative C. The park could, therefore, host additional events or programs and provide additional interpretation at Fern Lake, Gap Cave, or the Hensley Settlement. Beneficial effects on visitor experience could result from the expanded access and use of Fern Lake and the Hensley Settlement (which could include, for example, increased numbers of guided tours of the settlement). Formalized partnerships and programs, for example, with cave organizations, would likely result in increased visitation to Gap Cave and other caves in the park, which would have a **long-term, minor to moderate, beneficial effect** on visitor use.

The overall effect of Alternative C on visitor use and experience park-wide would be **long-term, moderate to major, and beneficial** to those who prefer more opportunities for a variety of experiences, partnerships, and access. For those visitors who do not wish to see any changes in the park, the effects would be long-term, moderate, and adverse.

Cumulative Impacts

Cumulative effects of management actions proposed under Alternative C on visitor use and experience would be similar to those described for Alternative B. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting visitor experience are combined with actions under Alternative C, the resulting cumulative effects would be **long-and short-term, major, and beneficial**.

Conclusions

The overall effect of Alternative C on visitor use and experience would be **long-term, moderate to major, adverse and beneficial**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting visitor use and experience are combined with actions under Alternative C, the resulting cumulative effects would be **long-and short-term, major, and beneficial**.

SCENIC RESOURCES AND VISUAL QUALITY

Regulations and Policies

Regulations and policies that guide NPS actions with respect to scenic resources and visual quality are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

Issues regarding scenic resources and visual quality identified during public meetings and planning workshops included preservation of overall scenic qualities of the park, and protection of the numerous viewsheds that currently exist throughout the park, such as those at the Pinnacle and the Hensley Settlement.

To address these issues, a qualitative assessment of the effects of projected park actions on scenic resources/visual quality was made, and the effects were compared to Alternative A. In addition, information on scenic resources/visual quality was evaluated based on the professional judgment of NPS staff. Features considered regarding scenic resources and visual quality included views of natural and historic resources in the viewshed and sight distance. The geographic area of influence analyzed for possible effects on scenic resources and visual quality includes the entire park. The boundaries for the cumulative impacts analysis are also set to correspond to the park boundary since scenic resources/visual quality are primarily defined by actions taken within the park. Scenic resources and visual quality can be affected by activities outside the park and may be considered from a near-view perspective of a visitor's immediate surroundings or the view from scenic overlooks that encompass long distances and access outside the park's boundaries.

Major assumptions used in the analysis of effects on scenic resources and visual quality include: (1) that access to Fern Lake and additional programs and features would be desirable to visitors, would attract additional visitors to the park, and would encourage visitors to remain in the park longer; (2) that an increase in partnering, outreach, and education by the park would provide a greater awareness of the park and its features, which would attract more visitors to the park; (3) that the acquisition of the Fern Lake watershed positively affects the viewshed from Pinnacle Overlook. However, the park would be unable to fully protect the viewshed within the Fern Lake watershed; (4) that the viewshed from White Rocks is related to development activity to the south of the park in Lee County, Virginia; and (5) proposed construction of new park facilities would not introduce new sources of outdoor light and, therefore, would not affect views of the night sky. It is assumed that the park would work with Lee County officials to ensure approval of compatible land uses in the viewshed from White Rocks.

Impact thresholds used for estimating the intensity of different types of effects on scenic resources and visual quality are presented in Table 31.

Table 31. Impact Thresholds for Scenic Resources and Visual Quality

Negligible: Effects to the scenic resources and visual quality of the landscape would be at or below the level of detection; changes would be so slight that they would not be of any measurable or perceptible consequence to the visitor experience.
Minor: Effects to the scenic resources and visual quality of the landscape would be of little consequence to the visitor experience. Mitigation measures, if needed to offset adverse effects, would be simple and successful.
Moderate: Effects to the scenic resources and visual quality of the landscape would be readily detectable. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.

Major: Effects to the scenic resources and visual quality of the landscape would be obvious, with substantial consequences to the visitor experience. Extensive mitigation measures would be needed to offset any adverse effects and their success would not be guaranteed.
Duration: Long-term: Changes would be recognized for more than one year. Short-term: Changes would be recognized for less than one year.

Impacts of Alternative A

Other than the new composting comfort station at Fern Lake, there would be no new structures that would affect the scenic quality of the park. Alternative A would not include any other human-made structures, construction, or vehicle access in the park that could affect scenic qualities. Management actions described for the Recommended Wilderness Zone would continue to preserve scenic resources.

Scenic vistas, from most vantage points within the park, would not be expected to change under Alternative A. Views from scenic vantage points in the park would be maintained, while development activity outside the park could affect scenic resources and visual quality in the future, depending on the type and nature of as yet unknown or planned future developments.

The acquisition of the Fern Lake watershed protects the scenic resources and visual quality of this area into the future. The viewshed from White Rocks is determined by development in the area to the south and outside the park in Lee County, Virginia. Most of the property adjacent to the park is zoned as agricultural, but some of the land along U.S. 58 is zoned for residential, commercial, and manufacturing. The overall effect of Alternative A on maintaining scenic resources and visual quality would, therefore, be **long-and short-term, minor, and beneficial.**

Cumulative Impacts

Under Alternative A, the cumulative effects on scenic resources and visual quality would be influenced by actions outside of the park. Declaration of the Fern Lake watershed as being unsuitable for coal mining (Federal Register: September 23, 1996) and later NPS acquisition of the Fern Lake watershed had a major, beneficial effect by protecting the viewshed at Pinnacle Overlook. The viewshed from White Rocks may change in the future if the land along U.S. 58 is developed. Lee County officials indicate that the improvement of U.S. 58 could encourage additional development along the corridor near the park (Lee County 2004). Except for the area near the White Cliffs, the viewsheds from the Natural Zone and Recommended Wilderness Zone would not be expected to change, nor would other viewsheds from other zones in the park. Designation of 14,091 acres as Recommended Wilderness provided for continued protection of the natural scenic qualities of the majority of the park. The Wilderness Road preservation project also provided for major scenic improvements in the park. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting viewshed are combined with actions under Alternative A, the resulting cumulative effects would be **long-and short-term, major, and beneficial.**

Conclusions

The overall effect of Alternative A on scenic resources and visual quality would be **long-and short-term, minor, and beneficial.** When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting scenic resources and visual quality are combined with actions under Alternative A, the resulting cumulative effects would be **long-and short-term, major, and beneficial.**

Impacts of Alternative B

As compared to Alternative A, Alternative B would provide for larger and more numerous Developed Zones, and a greater potential for new facilities, and increased visitor access compared to Alternative A. In addition, construction of seven new minor facilities in Developed Zones at the Hensley Settlement, Fern Lake, and the Wilderness Road Campground would be constructed, and would potentially affect scenic resources and visual quality (see Chapter 2 for detailed information on these projects) in the immediate area where construction would occur.

The number and size of the various new minor facilities under Alternative B would be limited, and built using sustainable building practices using materials and methods that would minimize the footprint on the landscape. These practices would minimize adverse efforts to the scenic resources of the park.

The overall effect of Alternative B on scenic resources and the visual quality of the park would be **long- and short-term, minor, and adverse.**

Cumulative Impacts

Cumulative effects of management actions proposed under Alternative B on scenic resources and visual quality would be similar to those in Alternative A, except construction of a few, limited facilities could have a **long- and short-term, minor, adverse** cumulative effect on scenic resources/visual quality.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting scenic resources and visual quality are combined with actions under Alternative B, the resulting cumulative effects would be **long-and short-term, minor and adverse.**

Conclusions

The overall effect of Alternative B on scenic resources and visual quality would be **long-and short-term, minor, and adverse.**

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting scenic resources and visual quality are combined with actions under Alternative B, the resulting cumulative effects would be **long-and short-term, minor, and adverse.**

Impacts of Alternative C, the Preferred Alternative

As compared to Alternative A, Alternative C would provide for larger and more numerous Developed Zones, greater potential for new facilities, and increased visitor access compared to Alternative A. In addition, construction of 11 new minor facilities in Developed Zones at the Hensley Settlement, the base of Brush Mountain, Fern Lake, and the Wilderness Road Campground would be proposed for construction. The effects of Alternative C on scenic resources and visual quality of the park would be similar to those in Alternative B. The overall effect of Alternative C on scenic resources and visual quality of the park would be **long- and short-term, minor, and adverse**.

Cumulative Impacts

Cumulative effects of Alternative C on the park's scenic resources and visual quality would be similar to Alternative B. When the beneficial and adverse effects of other past, present, and reasonably

foreseeable future plans, projects, and activities affecting scenic resources and visual quality are combined with actions under Alternative C, the resulting cumulative effects would be **long-and short-term, minor, and adverse**.

Conclusions

The overall effect of Alternative C on scenic resources and visual quality would be **long- and short-term, minor, and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting scenic resources and visual quality are combined with actions under Alternative C, the resulting cumulative effects would be **long- and short-term, minor, and adverse**.

TRANSPORTATION

Regulations and Policies

The regulations and policies that guide NPS actions with respect to transportation resources are summarized in the "Service-wide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

The primary transportation issue identified during public scoping meetings included the desire to provide increased access to the park. Specifically, the public expressed a desire for more transportation access to the Hensley Settlement and Fern Lake, additional trails that connect with areas outside the park, additional horseback riding and mountain biking trails, improved trailheads, and improved signage. Tunnel safety was also identified as an issue.

The area analyzed for possible effects includes the park and sections of the roadways accessing the park in the neighboring four counties. Major assumptions used in the analysis were: (1) a qualitative analysis was prepared, since information on future year traffic estimates were not available; (2) facilities and programs that would increase visitation at the park and increase the average length of stay for visitors would increase traffic volumes on park and area roadways; (3) actions that would increase the population or employment in the region would increase the visitation at the park; (4) an increase in traffic on U.S. 25E through the Gap Tunnel (a park road) does not necessarily lead to an increase in the number of visitors coming into the park; and (5) there would be no changes in the manner in which the tunnel would be managed, thereby maintaining safe operations.

Impact thresholds used for estimating the intensity of different types of effects on transportation resources are presented in Table 32.

Table 32. Impact Thresholds for Transportation

Negligible: No effects would occur, or the effects to transportation would be below the level of detection.
Minor: Effects to transportation would be detectable. If mitigation measures were needed to offset potential adverse effects, they would be simple and successful.
Moderate: The effects to transportation would be readily apparent. If mitigation measures were needed to offset potential adverse effects, they could be extensive, but would most likely be successful.
Major: The effects to transportation would be readily apparent and would cause substantial changes. Mitigation measures to offset potential adverse effects would be extensive and their success could not be guaranteed.

Duration:	Long-term: Takes more than one year to recover. Short-term: Recovers within one year.

Impacts of Alternative A

There would be no new transportation projects proposed to under Alternative A. No major new trails for hiking, horseback riding, or mountain biking would be added to the park. Increased public access to Fern Lake could increase visitation to this area of the park. No additional access would be provided to Sugar Run, Pinnacle Overlook, Hensley Settlement, Martin's Fork, KY 988 and Pinnacle Road. Lack of parking at Hensley Settlement and Chadwell Gap Trailhead would continue as there would be no transportation improvements constructed in this alternative. Continuation of existing levels of education and outreach and partnering with caving groups, educational institutions, Daughters of the American Revolution, Wilderness Road State Park and other organizations would be maintained at current levels. The overall effect of Alternative A on transportation would be **long-term, minor and adverse**.

Cumulative Effects

Under Alternative A, the cumulative effects on transportation inside the park would be controlled primarily by park management actions. Cumulative effects on transportation on the access roads to the park would be largely controlled by municipal and federal activities outside the park. Past projects in the park described in Chapter 2 have attracted, and would continue to attract, additional visitors to the park and would encourage a longer stay in the park.

Prior to federal ownership of the park, the creation of Fern Lake by damming the Little Yellow River by private interests created a private recreational venue as well as a public water supply. These activities have attracted, and will continue to attract, additional visitors to the park who require access and parking. The declaration of Fern Lake watershed as unsuitable for coal mining (Federal Register: September 23, 1996) resulted in the elimination of mining in the vicinity of the park and, therefore, fewer trucks and employee vehicles on the road to Fern Lake. Acquisition of the Fern Lake watershed provides increased opportunities for park visitors, which may increase parking and roadway maintenance needs in the long-term.

Construction of the Cumberland Gap tunnel diverted traffic from the old route through the Cumberland Gap and enabled the restoration of the Wilderness Road. This, combined with the Daniel Boone visitor contact center, has resulted in increased numbers of visitors to the park, especially during nature and cultural fairs, typically attended by over 40,000 people from the area and region. Improvements made in 2007 resulted in the temporary closure of a portion of the tunnel, but these improved the stability necessary for continued safe travel. Multi-laning of U.S. 25E created a short cut between I-81 and I-75 and also contributed to attracting additional visitors to the U.S. 25E tunnel. However, most of these "visitors" passed through the park in several minutes without stopping to enjoy the park and, therefore, historically have not consumed parking or roadway capacity beyond the tunnel. There would be no changes in the manner in which the tunnel would be managed, thereby maintaining safe operations.

State parks in the area, including Wilderness Road State Park, Pine Mountain State Park, and Natural Tunnel State Park, attract visitors from around the region. These visitors consume transportation capacity on U.S. 25E and U.S. 58. The proposed industrial parks in the region, including the three business parks listed in the "Cumulative Impact Analysis" section of Chapter 4, would attract new businesses to the area, which could, in turn, attract new residents. This would add traffic to the area roadways, including U.S. 25E and U.S. 58.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting transportation are combined with actions under Alternative A, the resulting local and regional cumulative effects would be **long- and short-term, major and beneficial.**

Conclusions

The overall effect of continuing current management actions under Alternative A on transportation would be **long-term, minor, and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting transportation are combined with actions under Alternative A, the resulting local and regional cumulative effects would be **long- and short-term, major, and beneficial**.

Impacts of Alternative B

As compared to Alternative A, Alternative B would provide for larger and more numerous Developed Zones, greater potential for new facilities, and increased visitor access. In addition, seven new minor facilities in Developed Zones at the Hensley Settlement, Fern Lake, and the Wilderness Road Campground would be proposed for construction and would potentially attract both park visitors and area residents. Visitors may also choose to visit other areas of the park, increasing the demand for transportation facilities throughout the park.

Under Alternative B, there could be additional guided tours and other activities at the Hensley Settlement. These opportunities could attract additional visitors to the park, which could create desires for additional parking and vehicle access problems. However, these increased needs should be alleviated with the proposed access and parking improvements. Access would be provided to the Developed Zones at Fern Lake. Access to the Pinnacle Overlook and Sugar Run would be alleviated by improving Pinnacle Road and KY 988. Access to the Hensley Settlement would be improved by adding a new parking facility to the west of the settlement at the base of Brush Mountain, by improving Shillalah Creek Road, and by expanding the parking area on the west side of the Hensley Settlement. Parking problems at the Chadwell Gap Trailhead would continue since there would be no facility constructed at this location under Alternative B. Education, outreach, and partnering would be the same as Alternative A, which would not change associated transportation patterns or volumes over those that currently exist. The overall effect of Alternative B on local transportation would be **long-term, minor, and beneficial**.

Cumulative Impacts

Under Alternative B, the cumulative effects on transportation inside the park would be controlled primarily by park actions similar to Alternative A. Cumulative effects on transportation on the access roads to the park would be largely influenced by activities outside the park as described under Alternative A. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting transportation are combined with actions under Alternative B, the resulting cumulative effects would be **long- and short-term, major, and beneficial**.

Conclusions

The overall effect of management actions proposed under Alternative B on local transportation would be **long-term, minor, and beneficial**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting transportation are combined with actions under Alternative B, the resulting cumulative effects would be **long- and short-term, major, and beneficial**.

Impacts of Alternative C, the Preferred Alternative

As compared to Alternative A, Alternative C would provide for larger and more numerous Developed Zones, greater potential for new facilities, and increased visitor access (see Chapter 2 for detailed information on these projects). In addition, construction of 11 new minor facilities in Developed Zones at the Hensley Settlement, the base of Brush Mountain, Fern Lake, and the Wilderness Road Campground would be constructed. These changes could attract additional visitors to the settlement and Fern Lake, requiring access and parking.

The larger Developed Zone to the west of Hensley Settlement includes a parking facility at the base of Brush Mountain that is a potential improvement to visitor access for this area, and an expanded parking area immediately west of the Hensley Settlement. The Developed Zone at Fern Lake would include an area to the south of the lake as well as a corridor that connects the visitor center to Fern Lake. These changes could provide a corridor for a park roadway, as well as trails for visitors. At the Wilderness Road Campground, several campsites would be reconstructed to accommodate horse trailers. In addition, some minor projects could also be constructed in other parts of the park. Facilities could include comfort stations, visitor contact stations, picnic facilities, unpaved trails, limited paved roads, and paved parking areas.

Education and outreach programs would be expanded as compared to Alternative A. The park may host additional events or programs and they may provide additional interpretative activities. Partnering opportunities would also be expanded as compared to Alternative A. Examples of potential new or formalized partnerships include those with the Cave Research Foundation and trail organizations. New facilities and programs could attract more visitors to the park and could also extend the visitors average length of stay. Additional visitors and their longer stay would require increased parking and access addressed by Alternative C. Parking problems at the Chadwell Gap trailhead would continue since there would be no new facilities at this location.

The overall effect of Alternative C on transportation would be **long-term, moderate, and beneficial**.

Cumulative Impacts

Cumulative effects of Alternative C on transportation would be similar to those associated with Alternative A. Under all the alternatives, including Alternative C, the cumulative effects on transportation inside the park would be influenced primarily by park actions. Cumulative effects on transportation on the access roads to the park would be largely controlled by activities outside the park. Additional road access and parking proposed under Alternative C would increase the transportation network in the park, adding to the cumulative long-term effects. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting transportation are combined with actions under Alternative C, the resulting cumulative effects would be **long- and short-term, major, and beneficial**.

Conclusions

The overall effect of Alternative C on transportation would be **long-term, moderate, and beneficial**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting transportation are combined with actions under Alternative C, the resulting cumulative effects would be **long- and short-term, major, and beneficial**.

PARK OPERATIONS

Regulations and Policies

Regulations and policies that guide NPS actions with respect to park operations are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

Park operations issues identified during public meetings and planning workshops included a desire for improved signage on roads and trails, the need for additional enforcement to properly manage visitor activities such as non motorized boating and outdoor recreation in Fern Lake and park-permitted rock climbing, expansion of education, outreach and partnering programs, additional interpretation activities, such as covered wagon rides, and increased numbers of guided tours, programs, demonstrations, and special events.

The area analyzed for possible effects on park operations includes the entire park. Major assumptions used in the analysis were: (1) a larger Developed Zone could result in more facilities being constructed, which could result in higher manpower requirements, including law enforcement, maintenance, and interpretation; (2) more facilities would result in higher levels of visitation and longer average stays; this would result in higher manpower requirements for law enforcement, maintenance (including long-term maintenance), and interpretation; (3) increased educational and interpretive programs and increased partnering and/or research initiatives would strain park operations without an increase in staffing; (4) a more extensive trail system would result in higher manpower requirements including maintenance and law enforcement; (5) additional population and employment in the tri-state area could result in additional visitation to the park and. therefore. higher manpower requirements including law enforcement, maintenance, and interpretation; (6) under Alternative A, the existing management programs would be extended into the future, few or no new programs for visitors would be planned and implemented, and Fern Lake was assumed to be part of the park; and (7) although increased staffing and funding are proposed under all three alternatives, implementation of the approved plan would depend on future funding and service-wide priorities. Approval of a general management plan does not guarantee that funding and staffing needed to implement the plan will be forthcoming. Funding for capital construction improvements is not currently shown in NPS construction programs, and it is likely that all capital improvements will not be totally implemented during the life of this general management plan. Larger capital improvements may be phased in over several years, and full implementation of the general management plan could be many years into the future.

The impact thresholds used for estimating the intensity of different types of effects on park operations are presented in Table 33.

Table 33. Impact Thresholds for Park Operations
Negligible: Effects on park operations would be at or below the level of detection.
Minor: Effects on park operations would be detectable. The change would be noticeable to staff, but probably not to the public.
Moderate: Effects on park operations would be readily apparent to staff and possibly to the public in terms of effects on the visitor experience.
Major: Effects on park operations would be readily apparent to staff and the public, and would result in substantial, widespread changes.
Duration*:* Long-term: Takes more than one year to recover. Short-term: Recovers within one year.

Impacts of Alternative A

Under the Alternative A, existing management strategies for operating the park would continue, with the exception of the addition of four full-time staff to provide visitor services for Fern Lake and the Hensley Settlement. Operations would continue to be based from existing facilities (park headquarters, visitor center, maintenance area, etc.) located in the Developed Zone at the Gap. The tunnel would continue to be serviced by the existing law enforcement staff at the park (prior to the tunnel, the park staff had no road-related enforcement duties).

Operational activities such as interpretation, inventory and monitoring, research, and resource management would continue to be conducted primarily from the park headquarters and visitor center with park interpretive activities conducted at designated areas throughout the park. Under Alternative A, access to the park would continue to be provided from existing locations. Maintenance of facilities would be expected to continue to require long-term investment of manpower and supporting dollars. Cyclic maintenance would continue for existing facilities into the future with no major changes.

Increased visitor access to Fern Lake would be expected as well as use of this area and lands adjacent to this portion of the park. Addition of four, new full-time equivalent park staff would help to address park operational requirements in this area, as well as at the Hensley Settlement . One of the responsibilities of the new staff would include the appropriate management of non motorized boating and outdoor recreation in Fern Lake, as a means of assuring that water quality of this drinking water reservoir is fully protected. Visitor services at Fern lake would be limited, however, due to no proposed new programs, or facilities other than a new composting comfort station. This would likely not fully achieve desired conditions to expand visitor interpretive ideas. New staff would also be involved in management of other activities in the park, including, for example, rock climbing (by permit, based on individuals merit and experience, and following evaluation in accordance with the National Environmental Policy Act).

Under the Alternative A, the boundaries and sizes of the existing Recommended Wilderness Areas (approximately 14,091 acres) would remain unchanged. Wilderness management efforts by the park would remain unchanged. No new wilderness areas would be proposed.

Continuation of existing levels of education, outreach, and informal partnering with caving groups, educational institutions, Daughters of the American Revolution, Wilderness Road State Park, and other organizations, would be maintained at current levels, which may not meet future demands. Interpretive activities would also be maintained at current levels, which would not adequately address visitor issues, nor would it meet demands in the future, thereby placing increased demands on existing staff.

The overall effect of Alternative A on park operations would be **long-term, minor, and adverse**.

Cumulative Impacts

Under Alternative A, the cumulative effects on operations would be controlled primarily by past and future actions inside the park. Past actions listed in Chapter 2 have attracted, and would continue to attract, additional visitors to the park and would encourage longer visitation in the future. These past and future actions could lead to a requirement for additional law enforcement, maintenance, and interpretive staff to meet the increased visitation demand. In addition, increased demand for use of the camp ground and other camp sites would place increased demands to maintain these facilities.

In addition to actions inside the park, certain actions outside the park have had, and would continue to have effects on park operations. For example, the multi-laning of U.S. 25E (to allow restoration of the Wilderness Road and improve safety conditions) created a short cut between I-81 and I-75, thereby attracting additional visitors to the U.S. 25E Cumberland Gap tunnel located inside the park. There would be no changes in the manner in which the tunnel would be managed, thereby maintaining safe operations. Although most of these "visitors" pass through the park in only a few minutes without stopping to enjoy the park, additional patrols of the tunnel and the approaches are required. The three business parks listed in "Cumulative Impact Analysis" section in Chapter 4 could also attract additional population to the tri-state area, which could place additional future demands on law enforcement, maintenance, and interpretive staff.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting park operations are combined with actions under Alternative A, the resulting cumulative effects would be **long- and short-term, moderate, and adverse**.

Conclusions

The overall effect of Alternative A management actions taken on park operations would be **long-term, minor, and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting park operations are combined with actions under Alternative A, the resulting cumulative effects would be **long- and short-term, moderate, and adverse**.

Impacts of Alternative B

The effects of Alternative B on park operations would be similar to those described for Alternative A, except seven, minor new facilities could be constructed in Developed Zones at Fern Lake, the park headquarters area, Sugar Run, the campground/Gap area, and the Hensley Settlement. Similar to Alternative A, the tunnel would continue to be serviced by the existing law enforcement staff at the park (prior to the tunnel, the park staff had no road related enforcement duties). Creation of a new and larger Developed Zone as compared to Alternative A could also result in construction and operation of a limited number of other new park facilities. This would provide opportunities for additional visitor use of the park. These new activities would increase the level of effort required for interpretation, maintenance, and law enforcement. Cyclic maintenance requirements would increase relative to the amount of new facilities constructed and operated in the future compared to Alternative A

Four (full time equivalent) employees would be added to existing staff in Alternative B, the same as proposed for Alternative A. It is likely that the park would be unable to fully achieve desired conditions in program areas such as resource protection, visitor services and interpretive activities.

The overall effect of management actions proposed under Alternative B on park operations would be **long-term, minor, and adverse**.

Cumulative Impacts

The effects of Alternative B on park operations would be similar to those defined for Alternative A, except under Alternative B some minor, new facilities would primarily be added in Developed Zones at the Hensley Settlement, Fern Lake, and the Wilderness Road Campground and possibly other areas of the park as prescribed by zone. These effects would be added to those of other projects and actions both inside and outside the park described previously, and would have a potential to place additional demands on law enforcement, maintenance, and interpretive staff. However, the addition of four new (full-time equivalents) staff members would offset the potentially adverse effects on park operations. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting park operations are combined with actions under Alternative B, the resulting cumulative effects would be **long- and short-term, moderate, and adverse.**

Conclusions

The overall effect of management actions proposed under Alternative B on park operations would be **long-term, minor, and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting park operations are combined with actions under Alternative B, the resulting cumulative effects would be **long- and short-term, moderate, and adverse**.

Impacts of Alternative C, the Preferred Alternative

The effects of Alternative C would be similar to those described in Alternative B, except that a total of eleven new minor park facilities would be proposed for construction under Alternative C. Cyclic maintenance requirements would be greater than Alternative A, relative to the increase in facility construction and operation. This would potentially adversely effect park operations, but this would be offset by hiring 7.2 (full-time equivalent) employees, as compared to four under Alternative A. Under Alternative C, these staff members would assist park operations at Fern Lake, the Hensley Settlement, as well as serve the needs of expanded education, outreach, and formalized partnering programs.

Due to the increase in visitor services, and addition of park staff to address the operations support needs, the overall effect of management actions proposed under Alternative C on park operations would be **long-term, moderate and beneficial**.

Cumulative Impacts

Cumulative effects of Alternative C on park operations would be similar to those described for Alternative B, except that the construction of 11 new minor projects under Alternative C would contribute to the overall cumulative effect of past, present, and reasonably foreseeable projects. However, the addition of 7.2 full time equivalent employees would offset these potentially adverse effects on park operations. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting park operations are combined with actions under Alternative C, the resulting cumulative effects would be **long- and short-term, minor, and adverse**.

Conclusions

The overall effect of Alternative C on park operations would be **long-term, moderate, and beneficial**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting park operations are combined with actions under Alternative C, the resulting cumulative effects would be **long- and short-term, minor, and adverse**.

CONCESSION OPERATIONS AND COMMERCIAL SERVICES

Regulations and Policies

Regulations and policies that guide NPS actions with respect to concession operations and commercial services are summarized in the "Servicewide Mandates and Policies" section of Chapter 1 and in Appendix B.

Method

Concession operations and commercial services issues identified during public meetings and planning workshops related primarily to increased numbers and types of services that would allow for increased visitor access to the park. Suggested services included additional guided tours and special events within the park and various types of concessions for lodging.

The area analyzed for possible effects on concession operations and commercial services includes the entirety of the park. Major assumptions used in the analysis were: (1) a qualitative analysis was prepared instead of a quantitative analysis as detailed information on potential commercial operations and projected visitation was not available; (2) there are no concessioners operating in the park under Alternative A; and (3) the potential for future commercial enterprises at the park would increase as visitation increased and as commercial proposals are evaluated on an individual basis for appropriate services in the park.

Impact thresholds used for estimating the intensity of different types of effects on concession operations and commercial services are presented in Table 34.

Table 34. Impact Thresholds for Concession Operations and Commercial Services

Negligible: Concession providers would not be affected, or changes in concession services would be below or at the level of detection. Any effects would be short-term. The concession provider would not likely be aware of the effects associated with the alternative.	
Minor: Changes in concession services would be detectable, although the changes would be minimal. The concession provider would be aware of the effects associated with the alternative, but the effects would be slight.	
Moderate: Changes in concession services would be readily apparent. The concession provider would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes.	
Major: Changes in concession services would be readily apparent and have important consequences. The concession provider would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.	
Duration:	Long-term: Takes more than one year to recover. Short-term: Recovers within one year.

Impacts of Alternative A

Limited new facilities (i.e., a new composting comfort station at Fern Lake) would be proposed for construction under Alternative A. Therefore, there would be limited opportunity for new concession

operations or other commercial services that would require support facilities in the park. Every application for an individual business permit or new concession operation would be evaluated based on its own merit.

There would be limited new facilities to attract additional visitors to the park; therefore, the bookstore operated by Eastern National (partner) and the Wilderness Road Campground, Hensley Tour, and Gap Cave Tour would not be expected to see significant changes to their current use levels. This would likely not attract or support new commercial or concession opportunities.

There would be limited opportunities for concession or commercial operations at Fern Lake under Alternative A because Fern Lake, although open to the visitors in the future, would have limited visitor services and facilities. Nor would there likely be increased concession opportunities at Hensley Settlement or other areas of the park.

Continuation of existing levels of education and outreach and informal partnering with caving groups, educational institutions, Daughters of the American Revolution, Wilderness Road State Park, and other organizations would be maintained at current levels, which would not affect the current commercial operations at the park.

The overall effect of continuation of current management actions under Alternative A on concession operations and commercial services would be **long-term, moderate, and adverse**.

Cumulative Impacts

For all the alternatives, including Alternative A, the cumulative effects on concession operations and commercial services would be influenced primarily by park actions, but would also be influenced by outside actions that could increase visitation to the park. Actions listed in the "Cumulative Impact Analysis" section of Chapter 4 could benefit either existing or potential future concession operations or commercial services by attracting more visitors to the park. The services could be provided by either a concessioner or the NPS.

Area visitors to nearby Wilderness Road State Park, Pine Mountain State Park, and the Natural Tunnel State Park may also choose to visit Cumberland Gap National Historical Park while in the area. By providing a short cut between I-81 and I-75, the multi-laning of U.S. 25E between I-81 and I-75 has attracted motorists into the tri-state area who might choose to visit the park. These actions could lead to a future increase in visitation and would benefit concession operations and commercial services.

Relocation of the Glacier Girl exhibit away from Middleboro could reduce the number of tourists to the area, which, in turn, could adversely affect the number of visitors to the park. This could have an adverse effect on concession operators at the park as well. Upwards of 50,000 people came to Middlesboro to attend the Glacier Girl air show, and many of the people also visited the park, with resulting benefits to concession operations and commercial services.

The three business parks listed in the "Cumulative Impact Analysis" section of Chapter 4 could encourage new businesses to locate in the tri-state area and supply new jobs to area residents in the future. The new jobs could also attract new residents to the tri-state area and these new residents may choose to visit the park and utilize commercial services. The proposed Pine Mountain Historical Trail could also attract new visitors that may choose to visit the park and also use commercial services.

Considering the fact that no concessions currently operate in the park, any changes in the existing conditions would be readily apparent. Concession opportunities would not be expected to change radically in the future under Alternative A.

When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting concession operations and commercial services are combined with actions under Alternative A, the resulting cumulative effects would be **long- and short-term, minor, and beneficial**.

Conclusions

The overall effect of continued management actions taken under Alternative A on concession operations and commercial services would be **long-term, moderate and adverse**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting concession operations and commercial services are combined with actions under Alternative A, the resulting cumulative effects would be **long- and short-term, minor, and beneficial.**

Impacts of Alternative B

Under Alternative B, potential opportunities for concessions and commercial services would increase as compared to Alternative A. Construction of a limited number of new facilities could occur in Developed Zones at Fern Lake, the park headquarters area, Sugar Run, the campground/Gap area, and the Hensley Settlement. Creation of a new Developed Zone at Fern Lake could result in construction and operation of a limited number of new park facilities in this area. This would provide opportunities for fishing and non-motorized and electric trolling motor boating for visitors to the park. These new activities could attract additional visitors as well as create opportunities for concession and commercial operations to provide these types of services to the visitors at Fern Lake in the future.

There could be additional guided tours and other activities at Hensley Settlement, as well as improved access via an improved Shillalah Creek Road and a new parking facility at the base of Brush Mountain. Additional tours and features, such as wagon rides, could be introduced at the Hensley Settlement, which could be provided by concessioners, once the park grants approval. Existing levels of education and outreach, and informal partnering with caving groups, educational institutions, Daughters of the American Revolution, Wilderness Road State Park, and other organizations would be maintained at current levels. This would not affect commercial operations at the park and related commercial/concession opportunities would be expected to be similar to existing conditions under Alternative A.

The overall effect of management actions proposed under Alternative B on concession operations and commercial services would be **long-term, moderate, and beneficial**.

Cumulative Impacts

Cumulative effects of Alternative B concession operations and commercial services are similar to those described for Alternative A. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting concession operations and commercial services are combined with actions under Alternative B, the resulting cumulative effects would be **long- and short-term, minor, and beneficial**.

Conclusions

The overall effect of management actions proposed under Alternative B on concession operations and commercial services would be **long-term, moderate, and beneficial**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting concession operations and commercial services are combined with actions under

Alternative B, the resulting cumulative effects would be **long- and short-term, minor, and beneficial**.

Impacts of Alternative C, the Preferred Alternative

Under Alternative C, potential opportunities for concession operations and commercial services would increase as compared to Alternative A. The effects on concession operations and commercial services would be similar to those described for Alternative B, except that Alternative C would include the construction of 11 new minor facilities in the park. In addition, a corridor between Fern Lake and the Wilderness Road Campground would be established as part of the Developed Zone. This could provide additional opportunities for fishing and non-motorized and electric trolling motor boating for visitors to the park, and a means to establish a park roadway and trails for visitors in the new corridor. At the Wilderness Road Campground, several campsites would be reconstructed to accommodate horse trailers. In addition, some minor projects could also be constructed in other parts of the park. Facilities could include comfort stations, visitor contact stations, picnic facilities, unpaved trails, limited paved roads, and paved parking areas. Proposed opportunities for facility changes such as the campground improvement, the proposed Fern Lake facilities and other increased opportunities for access proposed near the Hensley Settlement, could attract additional visitors to the park, which could also boost existing commercial operations at the park and provide the opportunity for new concession and commercial operations, such as the possibility of personalized and/or group tours, wagon rides, boat rentals, and similar types of activities.

The overall effect of management actions proposed under Alternative C on concession operations and commercial services would be **long-term, moderate, and beneficial.**

Cumulative Impacts

Cumulative effects of management actions proposed under Alternative C on concession operations and commercial services would be similar to those described for Alternative B. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting concession operations and commercial services are combined with actions under Alternative C, the resulting cumulative effects would be **long- and short-term, minor, and beneficial**.

Conclusions

The overall effect of Alternative C on concession operations and commercial services would be **long-term, moderate, and beneficial**. When the beneficial and adverse effects of other past, present, and reasonably foreseeable future plans, projects, and activities affecting concession operations and commercial services are combined with actions under Alternative C, the resulting cumulative effects would be **long- and short-term, minor, and beneficial**.

SUSTAINABILITY AND LONG-TERM MANAGEMENT

The National Environmental Policy Act (sec. 101 (b)) and the NPS Organic Act require an assessment of the potential for each alternative to produce long-term effects and the potential of foreclosing future options available to the NPS with regard to managing each park. An alternative is required to allow for sustainable development, which is defined as an action that meets the needs of the present without compromising the ability of future generations to meet their needs (*World Commission on Environment and Development* in NPS 2001a). This section addresses the following three components of the sustainability assessment for each of the alternatives.

The Relationship between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity - National Environmental Policy Act (Section 102 (c) (IV))

Alternative A

As demand for visitor use and recreation in the park grows, the long-term protection and enjoyment of resources could be jeopardized in some areas of the park under Alternative A. Despite implementation of a management strategy to provide continued protection of cultural and natural resources, there would likely continue to be instances where resources are disturbed by visitors. These impacts would be avoidable only if human use were not allowed in the park. Mitigation measures would be taken where possible to avoid and reduce these impacts. Continuation of the present effective management of natural and cultural resources, and the present active level of education, outreach and partnering programs would contribute to the long-term protection and preservation of resources. Continued coordination with local agencies, organizations, and other cooperative initiatives for resource and use management would enhance resource protection and protection of park natural and cultural resources.

Increased visitor use of Fern Lake is expected under Alternative A since the area will be opened to visitors. No new facilities would be provided other than minor repairs and maintenance of two houses and a boat dock, and a new composting comfort station. Additional visitor activity at Fern Lake under Alternative A could potentially cause increased soil erosion that could affect water quality. However, these potential effects would be offset by the addition of four new full-time employees to the park staff, implementation of best management practices for operation of the facilities at Fern Lake, continued education and outreach, and permanent preservation of the entire Fern Lake watershed.

Visitation is also expected to increase in other parts of the park as a result of past construction of facilities, including the Wilderness Road preservation project, construction of the Daniel Boone Visitor Information Center in 2004, restoration of the Hensley Settlement, renovation of the Civic Park, rehabilitation of the main visitor center, Wilderness Road Campground improvements, and construction at nearby state parks (Wilderness Road State Park, Pine Mountain State Park). Increased visitation in other areas of the park could also potentially cause increased erosion and associated effects on water quality and aquatic life. Increased visitation could also potentially adversely affect cultural resources in the park under Alternative A. These potential effects would be offset by the addition of four new (full-time equivalent) employees to the park staff, implementation of best management practices for operation and use of facilities, and continued education and outreach. The permanent protection of the entire Fern Lake watershed and continued management of the majority of the park (14,091 acres) as Recommended Wilderness will ensure long-term maintenance and enhancement of resources.

Alternative B

The effects of Alternative B on the long-term protection and enjoyment of park resources would be similar to Alternative A. Development of a few new limited facilities would support the National Park Service mission while avoiding adverse cumulative impacts to ecosystems or resources. Short-term degradation of local water quality during construction projects would largely be prevented by best management practices. Short-term localized soil erosion and degradation of plant communities at facility sites and along trail construction corridors would be offset by implementing best management practices for storm water management and by using sustainable design and building practices. In addition, these potential effects would be offset by the addition of four new full-time employees to the park staff, continued education and outreach, and management of the majority of the park as Recommended Wilderness Zone and Natural Zone.

Alternative C

Alternative C would have slightly higher potential to jeopardize the long-term productivity of the

environment than that of Alternative A, since a variety and limited number of minor facilities would be constructed. However, expansion of the education, outreach, and partnering programs under Alternative C would contribute to the long-term protection and preservation of natural and cultural resources by increasing park stewardship. Increased coordination with local agencies, organizations, and other cooperative initiatives for resource use and management would further enhance resource protection and preservation. Development of new facilities would support the NPS mission while avoiding, reducing, and minimizing adverse, direct and cumulative impacts to ecosystems or resources. Short-term localized soil erosion and degradation of plant communities at facility sites and along trail construction corridors would be offset by implementing best management practices for storm water management and by using sustainable design and building practices. In addition, these potential effects would be offset by the addition of 7.2 new (full-time equivalent) employees to the park staff, increased partnering, education and outreach programs, and management of the majority of the park as Recommended Wilderness Zone and Natural Zone.

Any Irreversible or Irretrievable Commitments of Resources that would be Involved if the Alternatives Were Implemented - National Environmental Policy Act (Sec. 102 (c) (v))

The National Environmental Policy Act and the NPS define irreversible effects as those effects that cannot be changed over the long term or are permanent (NPS 2006a). An effect to a resource is irreversible if the resource cannot be reclaimed, restored, or otherwise returned to its condition before the disturbance. An irretrievable commitment of resources refers to the effects to resources that, once gone, cannot be replaced.

Alternative A

There would potentially be irreversible or irretrievable commitments of non-renewable resources under Alternative A associated with use of energy and materials for limited facility construction and maintenance (a new composting comfort station at Fern Lake, and stabilization and maintenance of two buildings and a boat dock at Fern Lake) and for normal park operations. There would be some adverse effects on cultural and natural resources at Fern Lake associated with increased visitor use as well. These resources would be irretrievable once they were committed.

Alternatives B and C

Although the risks of resource impacts would be further reduced by management actions proposed under Alternatives B and C, instances of irreversible or irretrievable commitments of natural or cultural resources might occur. For example, removing artifacts or disturbing significant associated archeological resources would compromise the information potential of the site and result in an irreversible commitment of resources. Significant sites contain unique data that cannot often be replicated or recovered once lost or disturbed. Proposed management actions would contribute to resource protection and preservation and would be expected to minimize the occurrence of irreversible or irretrievable impacts. Limited amounts of nonrenewable energy and materials would be used for construction of a limited number of new facilities and park operations. These resources would be irretrievable once they were committed.

Any Adverse Impacts That Could Not Be Avoided If the Actions Were Implemented– National Environmental Policy Act (Section 101(c) (ii))

The National Park Service defines adverse impacts as those that cannot be fully mitigated or avoided. The majority of adverse effects may be mitigated or avoided. There are no major, adverse effects identified that are associated with implementation of the management actions proposed under any of the alternatives (A, B or C).

Chapter 5

RECOMMENDATIONS FOR FUTURE PLANNING EFFORTS

The Wilderness Road

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CHAPTER 5
RECOMMENDATIONS FOR FUTURE PLANNING EFFORTS

Upon completion of this general management plan, other more detailed studies and plans would be needed for implementation of specific actions. These more detailed studies and plans will describe how the NPS will achieve the desired conditions outlined in the general management plan. As required, additional environmental compliance (National Environmental Policy Act, National Historic Preservation Act), and other actions necessary to comply with relevant laws and policies would be conducted. Opportunities for public input would be provided during development of these studies and plans. Those additional studies and plans include, but would not be limited to, these listed in this chapter.

CULTURAL RESOURCES

Unmanaged visitor use at archeological or historic sites may impact the integrity and scientific and cultural value of these sites. The nature and extent of these impacts are difficult to assess because baseline data on site conditions in the park are sometimes unavailable or incomplete. Long-term protective strategies are needed for significant sites to avoid impact by visitors and/or park management activities. Park managers must maintain historic buildings on an ongoing basis (i.e., periodic maintenance and rehabilitation) to ensure that conditions are suitable for National Register eligibility. A resource stewardship strategy outlined in a planning document would address these issues. The following is a summary of future planning efforts for cultural resources:

- **Resource Stewardship Strategy**: Protection, research, and management of the park's cultural resources are essential for achieving the park's purpose and mission. A park-wide Resource Stewardship Strategy would address these issues and other scientific and legal requirements to promote understanding and management of park resources. This planning document would provide comprehensive recommendations about specific actions needed to achieve and maintain the desired resource conditions and visitor experiences for the park's cultural resources. This will include activities necessary to identify, evaluate, manage, monitor, protect, preserve, and treat the park's cultural resources, and to provide for enjoyment and understanding of the resources by the public.
- **Cultural Landscape Inventory**: A Cultural Landscape Inventory, the official inventory of NPS-managed historic landscapes, is an evaluated inventory containing information on the location, size, historical development, significance, and management of cultural landscapes throughout the National Park System. The framework for the inventory contains a hierarchy for looking at the landscape as a whole and also subdividing into smaller, more identifiable, components and features. Cultural Landscape Inventories are needed for the Hensley Settlement, Cumberland Gap Historic District, and any other identified cultural landscapes located within the park.
- **Cultural Landscape Reports:** A Cultural Landscape Report is a treatment document and presents recommendations on how to preserve, restore, or rehabilitate the significant landscape and its contributing features based on historical documentation, analysis of existing conditions, and the Secretary of the Interior's standards and guidelines as they apply to the treatment of historic landscapes. Cultural Landscape Reports should be completed for all identified cultural landscapes to provide detailed guidance for treatment and management of these resources.
- **Historic Structure Reports**: Historic Structure Reports are needed to determine treatment and use of historic buildings.
- **Historic Structures Preservation Guides for Hensley Settlement:** Historic Structures Preservation Guides for Hensley Settlement are needed to identify preservation methods to be used as guidance for future actions.

- **Cultural Resource Surveys**: There is a potential for significant, previously unidentified archeological resources to occur within the park. Large Civil war campsites and stores occur in the Gap and immediate areas.
- **Baseline Inventory of Cultural Resources in Gap Cave**: Gap Cave has a history of use that requires inventory and documentation.
- **Archeological Overview and Assessment:** An Archeological Overview and Assessment is needed for the park.
- **Collections Management Plan**: The Park's museum collections are maintained at the Southeast Archeological Center. In addition, some collections are held at the park. A regional Museum Storage Plan, approved by the Regional Director in May 2006, recommends that all long-term collections be moved from the park. A Collections Management Plan is needed to address collections for the park in a comprehensive manner. In addition, a **Scope of Collections Statement** and **Museum Collection Management and Emergency Plan** are needed to address collections.
- **The Farm Management and Interpretive Plan for the Hensley Settlement** (NPS 1972; updated in 1982): The revised plan created a new objective of making the settlement as productive as possible to help defray operating costs. The majority of these costs are related to maintaining the historic landscape and structures. This plan needs to be updated.

NATURAL RESOURCES

The following is a summary of recommended future planning efforts for natural resources projects:

- **Cave Management Plan for Gap (Cudjo) Cavern (NPS 1998a)**: This plan concluded that an inventory of the natural and cultural resources in Gap Cave was lacking. The priorities for research included cavern microclimate, migration of sand in Sand Cave, terrestrial and aquatic biology and effects on protected species, paleontology, mineralogy, water quality (physical and chemical), and radon monitoring. The park also needs to complete a separate list of priorities for inventorying cultural resources in the cave. A Cave Management Plan for all caves in the park is needed.
- **Resource Stewardship Strategy**: The most recent Natural Resource Management Plan (NPS 2002a) included a description of the status of resources in the park, a summary of the natural and cultural resource management programs that were in place at the time, a summary of the accountability and tracking required for resource management, and a set of resource management project statements and funding information. The Resources Management Plan includes a plan for the long range management of park resources and a tactical plan identifying short-term projects. The plan identifies and describes specific inventory, monitoring, research, restoration, and mitigation actions that are currently active or that are needed to perpetuate natural processes and resources and preserve cultural resources in the park. A Resource Stewardship Strategy would be prepared that incorporates the management directions presented in this general management plan and the prior Resource Management Plan recommendations to meet park goals and objectives.
- **Geographic Information System**: Baseline information on natural resources will continue to be computerized.
- **Natural Resource Surveys**: Reduction in the numbers of native brook trout in Martin's Fork and Shillalah Creek is an important natural resource issue. As of 2002, this species had not been recorded from the lower 1 mile of Martin's Fork. More research will be needed to address this issue. Baseline studies on natural resources have focused mainly on water quality. Inventorying and monitoring of backcountry areas, the recommended wilderness zone, threatened and

endangered species, and invasive species are needed. Additional and expanded baseline survey information is also required for other resources, including water quality of backcountry streams, air quality, caves (including radon), and flora and fauna.

LONG RANGE INTERPRETIVE PLAN

Long-Range Interpretive Plans provide a vision for the future (5-10 years) of interpretation, education, and visitor experience opportunities. They identify and analyze interpretation, education, and visitor experience goals and issues. They recommend the most effective, efficient, and practical ways to address those goals and issues. They address both non-personal services (interpretive media and facilities) and personal services (programs, personal contacts). Plans match interpretive media to messages to make sure they work well individually and collectively. The interpretive planning process is sensitive to which park resource experiences should be made accessible to visitors. Negative impacts on resources are minimized, and active stewardship is encouraged. This type of plan is a component of a Comprehensive Interpretive Plan. The park is in the process of updating its existing Long-Range Interpretive Plan.

LAND PROTECTION PLAN

Management Policies 2006 (NPS 2006a) requires that planning for the protection of park lands is integrated into the planning process for park management. Land protection plans are required to be prepared to determine and publicly document what lands or interests in land need to be in public ownership and what means of protection are available to achieve the purposes for which the unit was created. These plans are required to be prepared for each unit of the national park system containing nonfederal land or interests in land within its authorized boundary. A thorough review of a park's authorizing statutes and complete legislative history is required as part of the land protection planning process. The park will be required to update its existing land protection plan in the next planning period.

PARK ASSET MANAGEMENT PLAN

The Department of the Interior is required, as part of Executive Order 13327: Federal Real Property Asset Management, to create a department asset management plan that includes lifecycle costs, prioritized operation and maintenance costs, established bureau performance measures related to asset management, and a single database for federal real property reporting. The approach outlined in the Department of the Interior Asset Management Plan is to have all bureaus, including the NPS, create site-specific asset business plans.

The NPS is addressing this requirement through creation of Park Asset Management Plans that meet all Federal Real Property Asset Management Requirements for a park unit. The Park Asset Management Plan provides a 10-year asset management strategy for the park, allowing for annual updates that coincide with the existing budget and planning processes. Plan development includes life cycle total cost of ownership, analysis, processing, and calculations to facilitate identification and management of the funding gap between what should be spent on facilities and what is actually being spent.

FIRE MANAGEMENT PLAN

Fire management plans are fundamental strategic documents that guide the full range of fire management-related activities permitted by policy. They are required by the NPS Director's Order 18 (NPS 1998b), which says, "Every park area with burnable vegetation must have a fire management plan approved by the Superintendent." and the 2001 Federal Wildland Fire Management Policy (2001 Federal Fire Policy), which states, "Complete, or update, Fire Management Plans for all areas with

burnable vegetation." According to Director's Order 12, each NPS unit is required to review and update its Fire Management Plan annually with major review and revisions every 5 years. The park completed a plan in 2003 (NPS 2003c) that included the following elements: a description of the park, fire background information, fire presupression, emergency fire presupression, fire suppression mobilization, public relations, and legal responsibilities.

The objectives of the plan were to:

- Establish a fire organization and assign responsibility to park personnel;
- Outline procedures in the event of a wildfire;
- Provide for dissemination of information to the public on fire management actions at the park; and
- Identify legal responsibilities and develop actions for compliance.

The park is required to update the 2003 Fire Management Plan. Since the original plan, the park has been working as part of the NPS Fire Use Module to manage fires in the park. The Fire Use Module is a team of experienced and trained fire personnel committed to fire use operations and planning at the national level. Fire use is a combination of prescribed fires and wildland fire applications used to meet resources management objectives. Prescribed fires in parks manage landscapes, and reduce hazardous fuel loads near developed areas, and restore fire as a natural process in the ecosystem. Cumberland Gap successfully initiated its prescribed fire program in 2005 by completing two burns.

PARTNERING

The park is uniquely tied to the surrounding communities, and as such is part of the greater social, political, ecological, and historical fabric. The NPS must continue to consider how its actions in the park affect the surrounding environment and communities. Partnering opportunities will be identified within all future planning and implementation projects. The park will be managed in a manner that proactively resolves external issues and concerns to ensure that park values are not compromised. To accomplish this, resources and strategies are needed to establish and foster partnerships with public and private organizations to achieve the purposes and mission of the park.

Partnerships will be sought for resource protection, research, education, and visitor enjoyment purposes. Partnerships are necessary with local, state, and federal agencies and organizations in programs that have importance within and beyond park boundaries. Park managers will be able to use these partnerships to better adapt to changing ecological and social conditions within and external to the park and coordinate regional planning and land management as it affects the park and its viewsheds. The combined effect of a unified strategy would be an effective public private partnership for increasing values and for preserving the park resources. Creating new economic, environmental and educational partnerships is integral to the successful implementation of the general management plan.

Chapter 6

Consultation and Coordination

Cumberland Gap Winter Vista

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CHAPTER 6
CONSULTATION AND COORDINATION

PUBLIC INVOLVEMENT

Scoping is an early and open process for determining the scope of a proposed action or project and for identifying issues related to the project. During scoping for this General Management Plan / Environmental Impact Statement, NPS staff provided an overview of the project, including purpose and need and preliminary issues. The public has been involved and was asked to submit comments, concerns, and suggestions relating to the project and preliminary issues. The notice of intent to prepare an environmental impact statement was published in the *Federal Register* on May 29, 2003.

The public had varied avenues by which it participated during development of the plan: participation in public meetings, responses to newsletters, and submitting comments on the park's website by e-mail or letter. Input from the interested public organizations, and local, state, and federal agencies was gathered throughout the planning process. At the beginning of the process, both internal and external input was obtained as part of the scoping process. Input gathered during scoping was used to develop the alternatives and assess and compare the effects of management alternatives.

Internal scoping consisted of initial identification of issues by NPS staff based on what they had encountered with respect to managing park resources and experiences with visitors who have come to enjoy the park. NPS meetings were held at the park during the week of September 22, 2003 to obtain the park's initial input into the process.

The external scoping process provided early identification of concerns, issues, expectations, and values of existing and potential visitors, neighbors, cooperating associations, partners, scientists, scholars, and other government agencies. Public scoping meetings were advertised during May and June of 2004. A newsletter describing the General Management Plan / Environmental Impact Statement process was prepared and distributed in June 2004 that also announced the public meeting schedule. Also, a scoping letter was mailed to local, state, and federal agency representatives, tribal representatives, and the public in August 2004 (Appendix J). The scoping letter contained information on the function of a general management plan, statements of the park purpose and significance, information on the planning team and the process for planning, and methods available to the public for communicating with the team and participating in the planning effort.

The public was invited to voice issues and suggest ideas for the future of the park at three public scoping meetings held on August 10, 11, and 12, 2004 at the park and nearby venues. Press releases were issued prior to the public meetings, and comment cards and Internet addresses were provided for public use. Also, meetings were held with stakeholders during August and September 2004. These stakeholders included representatives from federal, state and local agencies, local governments, and educational institutions in the region, environmental interest groups, recreation user groups, historical societies and tourism groups. Information regarding the general management planning process was provided at the visitor center and park staff provided information to visitors regarding how to comment as well. Overall, the public scoping comment period was open for 30 days, and 12 meetings were held with the interested public and stakeholders to obtain public comment on the process. Over 500 comments were received during scoping. More than 30 percent of the comments related to education, outreach, and partnering, and nearly 25 percent of the comments were related to access issues. Trails and economic issues each encompassed approximately 10 percent of the comments. Fern Lake, special events, and other issues comprised the remaining comment topics.

A second newsletter was prepared and distributed in October 2005 that described how the management alternatives were developed based on agency and public input, and announced public meetings that were held in November, 2005. The alternatives were presented to the interested public

during four meetings held at the park on November 29 and 30, 2005. Press releases were issued prior to the public meetings, comment forms were provided and the public was notified how to comment via the Internet. Many of the public's comments at the meetings were directed at the potential use of Fern Lake and access to Hensley Settlement.

A third newsletter was issued in May, 2009 that provided an update on the plan, and described the alternatives that would be presented in the Draft General Management Plan / Environmental Impact Statement. The newsletter also identified that the next step in the process was issuance of the draft plan, and that public meetings for the draft plan would be announced.

A fourth newsletter was issued in November 2009 to announce the release of the Draft General Management Plan / Environmental Impact Statement and identify the date and location of public meetings. This newsletter notified the public how to comment via mail, Internet or in person. All newsletters are available online, as are other documents related to this planning effort.

The final three public meetings were held on December 8 and 9, 2009 at the visitor center. At each meeting, the superintendent, Mark Woods, and David Libman, from the Southeast Regional Office, gave brief summaries of the history and status of the General Management Plan, followed by a question and answer period. The remaining time was spent in an open house in which planning team members discussed the project with meeting attendees using posters that summarized the features of each alternative. Comment sheets were made available, and some comments were collected at the meeting.

The General Management Plan / Environmental Impact Statement is posted on the Internet at: http://parkplanning.nps.gov/ document.cfm?parkID=370&projectId=13830&documentID=30052.

CONSULTATION WITH OTHER AGENCIES/OFFICIALS AND ORGANIZATIONS

In addition to the consultation described above, additional consultation with agencies was conducted prior to completing the 2009 Draft General Management Plan / Environmental Impact Statement. Agency coordination letters are included in Appendix J.

In accordance with 36 CFR 800 and the Programmatic Agreement between the Advisory Council on Historic Preservation, the National Conference of State Historic Preservation Officers and the NPS, a letter was sent to the Virginia, Tennessee and Kentucky State Historic Preservation Officers and to the Advisory Council on Historic Preservation to initiate consultation (see Appendix F). The letters invited them to participate in the planning process and informed them that the NPS plans to use this environmental impact statement to fulfill the requirements of Section 106 of the National Historic Preservation Act as well as comply with provisions of the National Environmental Policy Act.

The NPS consulted with the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Offices under the terms of the Nationwide Programmatic Agreement for Section 106 compliance. Based on this consultation, the NPS determined what actions are programmatic exclusions, and for all other undertakings what actions would be required for review and comment under 36 Code of Federal Regulations 800. Letters were received from the three State Historic Preservation Offices and copies are included after the comments and response section.

During preparation of the Final General Management Plan, and in response to comments, the NPS also conducted additional coordination with the Virginia State Historic Preservation Officer. It was agreed that all Section 106 impacts would be changed to state that there would be a potential for adverse effects on cultural resources, because specific project designs are not yet available. Because specific future project designs are not yet available, a final conclusion regarding effects cannot be made, and a more conservative approach was taken in the General Management Plan for describing

effects on Section 106 resources. When specific projects are proposed that have a potential to affect cultural resources, they will undergo a full compliance review, to include Section 106 and National Environmental Policy Act assessments. These assessments will be tiered to information in the General Management Plan / Environmental Impact Statement. A similar response was provided to the Tennessee State Historic Preservation Officer.

In accordance with Section 7 of the Endangered Species Act (16 U.S.C. 1531 et seq.), the NPS contacted the U.S. Fish and Wildlife Service by letter to initiate consultation (see Appendix F) and to provide a list of threatened and endangered species, critical habitats, and species of concern. The U.S. Fish and Wildlife Service reviewed the Draft document and indicated that their primary concern was the continued protection and conservation of listed species, specifically *Blackside Dace* and *Indiana Bat*, and had no further substantive comments. The three state natural resources agencies were also contacted to provide a list of threatened and endangered species. Consultation letters were also sent to the Environmental Protection Agency, Region 4. A list of agencies contacted is provided in Appendix J. In addition, letters were sent in October, 2004 to Federally-recognized American Indian Tribes with ancestral lands in Tennessee, Virginia and Kentucky requesting feedback concerning the General Management Plan. These letters were followed up with individual phone calls and a subsequent letter identifying the purpose and need of the project and requesting input. A copy of this letter request and the list of American Indian Tribes contacted are included in Appendix K.

COMMENTS ON, CHANGES TO, AND RESPONSES TO COMMENTS ON THE DRAFT GENERAL MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT

Availability of the Draft General Management Plan / Environmental Impact Statement

The Draft General Management Plan / Environmental Impact Statement was made available for public review from October, 14, 2009 through January 4, 2010. Public meetings were held on December 8 and 9, 2009. Public comment was solicited during the public meetings; electronic and hardcopy comments were collected during the public comment period of January, 2010. Media and public service announcements were sent to local and regional newspapers and magazines, radio and television stations, and notices were posted at park units and park headquarters (see Appendix K for listing) in advance of the public meetings. Copies of the document were distributed by mail (both hard copies and CDs), as well as provided at park headquarters, posted on the Internet, and local libraries.

Comments on the Draft General Management Plan / Environmental Impact Statement were invited by all means and received in several different formats, including comment cards, public meeting transcripts from public meetings, letters, e-mail, and postings on the NPS Planning, Environment and Public Comment website. Comment sheets were handed out at public meetings, stakeholder meetings, and from park headquarters. A total of eight individuals entered comments on the NPS Planning, Environment and Public Comment website. All comments received are considered part of the administrative record.

Changes to the General Management Plan / Environmental Impact Statement

Changes made to the General Management Plan / Environmental Impact Statement as a result of public comments include the following:

- Table 2 and the text of the plan was changed to include reference to the requirement of the Surface Mining Control and Reclamation Act of 1977.
- Table 9 in Chapter 2 was changed to reflect the coordination with the Virginia State Historic Preservation Officer regarding potential adverse effects on Section 106 resources. Changes were

also made in the cultural resources section of Chapter 4 to respond to this same comment, and also summarized in Chapter 2 and the Executive Summary.

- Other minor changes were made to the document to edit for consistency.

Responses to Comments on the Draft Plan

Letters and Web comments received from agencies are reprinted in full in the pages that follow this summary of comments and responses. Substantive comments are highlighted in the body of each letter, and a response to the comment is provided on the page beside the copy of the letter. Agency letters were received from the Tennessee and Virginia State Historic Preservation Offices, U.S. Fish and Wildlife Service, Tennessee Division of Forestry, and the U.S. Environmental Protection Agency.

Other substantive comments from individuals and organizations are paraphrased or reprinted in their entirety, and NPS responses are provided in the pages that follow. Comments are considered substantive if they:

- Question, with reasonable basis, the accuracy of information in the Environmental Impact Statement
- Question, with reasonable basis, the adequacy of the environmental analysis
- Suggest different viable alternatives
- Cause changes or revisions in the proposal

Comments in favor of or against the preferred or other alternatives, or comments that only agree or disagree with NPS policy, are not considered substantive. NPS has responded to comments in order to clarify policy, position, or procedure.

All comments received were reviewed, grouped by topic and responses were developed. Comments were either taken directly from the author or paraphrased to reflect the similar nature of comments received. Each of these comments is followed by a NPS response and presented in the pages that follow.

Access and Visitor Experience

Comment: No expansion should be done to the park campground as described in alternatives B and C. The lack of electrical hookups in NPS campgrounds in general makes them one of the few refugees from the huge noisy RV's that make commercial campgrounds so unappealing. Power should not be installed in Loop D. Also, horse facilities cannot be added to the campground. The noise and smell from horses will destroy the calm and quiet that make your campground so enjoyable. Leave the RV and horse business to the commercial campgrounds, they more likely need the business.

Response: Electrical hookups are currently available at the park's Wilderness Campground. Providing electricity reduces the need for RV owners to run generators, thereby reducing noise levels. Provision for minimal (2) spaces for horse trailers was provided in response to visitor desires expressed during the planning process. The impact from these limited two horse trailer parking facilities on natural resources would be considered to be long- and short-term, minor and adverse.

Comment: We support establishing a satellite van parking area at Shillalah Creek and improvement of the Shillalah Creek Road, but do not feel a paved parking area is appropriate on the west side of Hensley. Providing vehicle access to Hensley Settlement to an unlimited number of visitors that may prefer it, should not be viewed as a part of the NPS's mission. The atmosphere of remoteness for the Hensley Settlement is

critical to the visitor's appreciation of the culture and historic significance associated with it. An excess of vehicles and visitors will destroy this.

Response: Access to Hensley was one of the most common comments raised during public scoping. In the case of the Hensley Settlement, a sense of isolation and feeling of an earlier time are important parts of the visitor experience. The NPS believes these values can be retained while still providing easier access.

Connectivity

Comment: As we contemplate the future of the Park for the next 15 to 20 years, it is an unfortunate geographic reality that there is no safe and convenient access to the Park Visitor Center in Middlesboro KY for pedestrians or bicyclists from Cumberland Gap TN. I believe it is important to note this as a deficiency in the current and proposed management plans and stress that it should be placed on an agenda for a time in the future when the economic climate of the country improves and funding for such development is available… I would like to see a pedestrian tunnel/greenway connecting Cumberland Gap TN and Middlesboro KY in my lifetime.

Response: There is no easy or inexpensive way to connect the Town of Cumberland Gap with the Park Visitors Center. Another tunnel for pedestrians and bikers is highly unlikely because of cost and impacts. Therefore, given the geographic, cost, topographic and environmental impact challenges – the likelihood of such a connection is not within the realm of reasonable funding foreseen at this time. Alternative C was selected as the Preferred Alternative as being the most cost effective.

Partnerships and Interpretation

Comment: Contract (or otherwise) with LMU, and its Museum, to enhance the area's Civil War Story and the role President Lincoln played, specifically, in helping this region, through the founding of a University for its citizens, which ultimately bore his name.

Response: The park and NPS are open to mutually beneficially private/public partnerships and would welcome discussions with potential partners. In addition, these types of interpretive activities are addressed in a separate Long-Range Interpretation Plan for the park (see Chapter 5).

Comment: Work with the Eastern Band of Cherokee Indians in North Carolina, to develop an interactive program telling of the importance of the Gap as "Warriors Path" and its intertribal use as a passage for Shawnee, Cherokee and others prior to and after Euro American appearance. Use enhanced, interactive interpretation programs to highlight the personal experiences of the customs and living history of these "first Americans". This will add a significant dimension to visitor attraction, and develop a stronger bond for such relationships with the American Tribes, NPS, and the public, with little operating overhead.

Response: These types of interpretive activities will be addressed in a separate, Long-Range Interpretation Plan for the park.

Comment: To that end, the National Heritage Area requests that it be considered as a primary partner for future interpretive and preservation needs for the park's significant Civil War-era resources. Cumberland Gap was a very significant place to both Federal and Confederate commanders in the war's early strategic thinking. It became a place of conflict during the war, and it possesses significant resources from which those stories can be told.

Response: The NPS and the park appreciate the interest of Middle Tennessee State University Center for Historical Preservation in the park's Civil War Resources, and welcome the opportunity to establish partnerships that further our mutual goals and objectives.

Comment: Build an outdoor classroom, Offer Professional Dev. for local teachers, acquaint them with the park and services offered at CGNHP, this would enable local teachers to better utilize the park. Partner with local Biology/Science students at local colleges Walter State, LMU, Southeast Community College, utilize them for wild flower identification, tree identification, water exploration, identification of living organisms, bird sanctuary (areas for viewing birds and butterflies)

Response: The park has an extensive education/outreach program and would continue to provide these services in the future. These types of programs will addressed in a separate Long-Range Interpretation Plan for the park (see Chapter 5).

Facilities

Comment: Throughout the draft document proposed developments are not detailed. Much additional information should be provided on any development being considered within the next 15 to 20 years.

Response: The detailed plans for site specific projects would occur during the implementation phase with opportunity for public input. general management plans provide guidance on desired future conditions and visitor experiences.

Comment: Horse facilities should not be added to the campground.

Response: Provision for minimal (2) spaces for horse trailers was provided in response to visitor desires identified during the planning process. The impact from these limited two horse trailer parking facilities would be considered negligible or minor.

Comment: Further development in the park should preclude overnight facilities, for example, and should also not include commercial activities that might compete with private enterprises located around the park.

Response: Commercial services would be addressed under authorization from the park via an incidental business permit. Each application is reviewed on its own merit, in compliance with all requirements, on a case-by-case basis.

Trails

Comment: Plans for the development of more trails between the Wilderness Road Campground and Cumberland Gap should also be a part of this GMP.

Response: The purpose and scope of a General Management Plan is to address a long range management approach for the park, but does not include specific locations or designs for future trails. Future specific developments involving trails will be consistent with park purpose, law, policy, and regulations, and will be provided during the implementation phase of planning. This will include environmental compliance documentation and public input.

Comment: Cumberland Gap could become the place where the Pine Mountain (KY) and Cumberland (TN) trails meet, and thus will become a critical resource for long distance hiking in the region. The joining of these two trails in the park will enhance Cumberland Gap's legacy as a critical link in transportation across and through the Cumberlands. Since both of these trails are being built by hikers for hikers, it will be critical for the park to prohibit their use by mountain bikes, horses and vehicles in the park.

Response: The purpose and scope of a general management plan is to address a long range management approach for the park, but does not include specific locations or designs for future trails. Future specific developments involving trails will be consistent with park purpose, law, policy, and

regulations, and will be provided during the implementation phase of planning. This will include environmental compliance documentation and opportunities for public input.

Comment: Maintenance, signage, promotion and patrol of the existing Cumberland Trail in the park need to be addressed. The route of the Cumberland Trail through the park should be designated in the final GMP.

Response: These areas are managed and patrolled by the park to the extent practicable. The Cumberland Trail and other trails are identified on the alternatives Figures 6, 7, and 8. Note response above regarding specific location of trails.

Comment: Routing, construction, maintenance, and patrol of the Pine Mountain Trail in the park also need to be addressed. A route entering the park at the visitor center or Sugar Run, extending through Cumberland Gap and then joining the Cumberland Trail at the Tristate Marker should be designated as part of the final GMP.

Response: The Cumberland Trail is identified on the alternatives figures. The Cumberland Trail transitions onto the Ridge Trail north of Cumberland Gap. Pine Mountain Trail connectivity in the park is in planning and the future connection is shown on alternatives Figures 6, 7, and 8. Note response above regarding specific location of trails.

Comment: Significant work needs to be done to secure trails in the Brownies Creek area of the northeastern corner of the park. These trails are used by ATVs that must be banned from all trails in the park.

Response: All Terrain Vehicle use is not allowed in the park. The park manages the Brownie's Creek Trail on a cooperative basis with the Kentucky Division of Water and the Kentucky Department of Fish and Wildlife Resources, because of the common border in this area of the park. All Terrain Vehicle use is also banned in the state-managed areas just outside the park in this area. The NPS will continue to coordinate with the State of Kentucky to enforce the prohibition of All Terrain Vehicles in the park and adjacent State lands.

Bicycle Trails

Comment: Our recreational use of the Park includes day hiking and bicycling. We are avid bicyclists and the increased opportunities for developing additional trails and bicycle access in the Park under Alternative C are is especially appealing. However, it is my hope that the proposed changes outlined in Alternative C be interpreted as an essential first step toward enhanced opportunities for bicycling in the Park rather than the last step to satisfy an increasingly important recreational constituency.

Response: Opportunities for bicycling consistent with the park's purpose, law and policy and that do not impair park resources will be considered.

Comment: Bicyclists are a diverse constituency group and it is difficult to accommodate their varied interests under a "one-size fits all" management plan that appeals to the lowest common denominator. It is my hope that a matrix of management plans can be developed to accommodate and appeal to the different styles or disciplines of bicycle activities occurring in the Park.

Response: The General Management Plan establishes fundamental resources and values as well as desired future resource conditions and visitor experiences. Subsequent implementation plans will address specific facilities, activities, designs and locations.

Comment: Currently the conditions in the Park are very supportive to the needs of the "Road biking" user group but improvements in signage and bicycle awareness for automobile drivers are certainly warranted. The proposed extension of NPS authority along the Sugar Run Road following the periphery of the Park boundary will significantly enhance the visitor experience of this user group, but also require additional NPS attention to mitigate potential conflicts between automobile driving visitors and bicyclists.

Response: Road biking is allowed on this road and all other roads in the park. The NPS owns the road to Sugar Run (Highway 988) and is responsible for maintenance, safety and enforcement of this and all other roads in the park. This road has a 25 mph speed limit to maintain safe conditions. There has only been one bicycle related accident reported in the park in the last 13 years. The park therefore does not plan on installing additional signs along the Sugar Run Road at this time. Information concerning bicycle safety and bicycle use in the park will be placed on the park web page to provide additional information for visitors.

Comment: I would like to suggest that all gravel utility roads in the vicinity of the Wilderness Road Campground be open to bicyclists. This would include the portion of the gravel service road connecting the campground with the terminus of the Gibson Gap trail at Virginia Hwy 58. Appropriate signage and user education efforts would be instrumental in mitigating potential user conflicts between bicyclists and horseback riders. The upper portion of the Gibson Gap trail where it becomes a single track would remain closed to bicyclists with a well placed sign and barrier if required. Opening this limited portion of "developed" wilderness zone would facilitate a natural experience for bicyclists without compromising the integrity of the Park's commitment to preserving the natural backdrop to Cumberland Gap.

Response: Use of bicycles is currently allowed on roads in the vicinity of the campground, including Tiprell Road, Colson Trail, Boone Trail (Old Highway 58), and all other roads in the park. Bicycles are not allowed in the recommended wilderness in accordance with provisions of the Wilderness Act. Bicycle use of the tunnel is not allowed, but the park does arrange to have bicycles transferred through the tunnel for safe passage. The NPS will continue to monitor safety along all park roads and trails. Note responses above regarding signage and posting information on the park's website. In addition, the park will post information regarding bicycle use, other opportunities for recreation, and safe park visits.

Comment: Currently this group of [mountain bike] users has very limited access to Park resources. The development of the new management plan under Alternative C has the potential to provide this constituency group with greater access. . . Potential areas designated for Mountain bike activity could be developed on the Lincoln Memorial University side of the Park, and in the area surrounding Fern Lake once it becomes an NPS administered unit.

Response: NPS Management Policies 2006 (Section 9.2.2.4) states that the designation of bicycle routes is allowed in developed areas and in special use zones based on a written determination that such use is (1) consistent with the protection of a park's natural, cultural, scenic, and esthetic values; (2) consistent with safety considerations; (3) consistent with management objectives; and (4) will not disturb wildlife or other park resources. A similar determination may be made to designate routes outside developed areas and special use zones; however, the designation must be made by promulgating a special regulation (as specified in 36 CFR 4.30).

Zoning, Alternatives and Impacts Associated with Individual Facilities

Comment: The footprint of the proposed developed areas be kept as small as possible, and all developments be consistent with historic park activities, with the exception of new facilities in the Fern Lake area.

Response: Subsequent implementation plans will address site-specific facilities, locations, activities and designs. The approval of a general management plan does not guarantee that funding and staffing

needed to implement the plan will be forthcoming. Future plans will incorporate sustainable practices, and as mentioned in the plan, will be consistent within the concept of the site-specific conditions) such as the sensitivity to the Historic Districts). Site-specific, future plans will be consistent with park purpose, law, policy and be sustainable. Proposed actions will include environmental compliance documentation and opportunities for public input.

Fern Lake

Comment: Development at Fern Lake should be limited to day use, with an emphasis on environmental education facilities, such as an interpretive trail around the lakes shore. No residences should be constructed or maintained, unless used solely by NPS personnel.

Response: Park hours are anticipated to remain as daylight hours, with continued operation of overnight camping at designated campsites. No residences will be constructed within the park.

Comment: I feel there needs to be a coopertive effort with Bell County and the NPS to make an entrance to the Fern Lake Watershed Aquisition to give greater access to the Park. My vision is a parking area similar the recent Chadwell Gap Trailhead. This could be easily developed with minimum cost. The area most suited for this access is a good Middlesboro City Street (Balmoral) that deadends behind Miller's Chapel Baptist Church. From there an old logging road winds through Parker Gap with gorgeous views of Fern Lake. A walking trail around Fern Lake and connecting to the Fitness Trail at Park Headquarters would be a great asset with minimum investment.

Response: The specific location and design of facilities at Fern Lake will be determined in future planning after acquisition is complete and with public input. Site-specific future plans will be consistent with park purpose, law and policy and be sustainable. Proposed actions will include environmental compliance documentation and opportunities for public involvement.

Comment: We believe that the Fern Lake watershed may need a separate designation as a Special Resource Zone, perhaps as a subset of the Natural Zone. (S) The watershed is unique in this region where many streams have been damaged by mining and other land disturbances. Yellow Creek acts as a "reference stream" for the region protecting a federally endangered fish. The subsurface transmission of water under a head of pressure to the alluvium of the lake creates a natural system that the park should preserve and interpret to the public. In fact, the entire story of the collaborative effort to protect this important "ecosystem service" should be interpreted as a natural counterpoint to the historic story of the Gap. Visitors to Middlesboro, KY will be able to enjoy water from the park that the City helped to protect. Visitors to the watershed will understand its unique ecological and geological functioning and the behaviors necessary to protect it. The educational opportunity for future publics is immense.

Response: The park currently includes Fern Lake as part of their interpretive programs for visitors and students (who visit the lake on park-sponsored field trips), and will continue to do so in the future. Interpretive activities include discussions of the use of Fern Lake as a water supply and importance of watershed functions and protection of this sensitive area. The majority of the Fern Lake watershed has been classified as a Natural Zone, which is designed to provide a high level of protection. Therefore, another zone designation is not believed to be necessary.

A small portion of the Fern Lake watershed is defined as a Developed Zone. However, only a site-specific action would be appropriate. In other words, it does not mean that the entire zone would be "developed". In addition, National Environmental Policy Act and Section 106 National Historic Preservation Act compliance assessments would also be required for any proposed new facilities.

Comment: We prefer that the footprint of the proposed developed areas be kept as small as possible, and that these developments be consistent with historic park activities, with the exception of new facilities in the

Fern Lake area. Throughout the draft document proposed developments are not detailed. Further development in the park should preclude overnight facilities, for example, and should also not include commercial activities that might compete with private enterprises located around the park.

Response: New facilities would only occupy a small portion of the Developed Zone. Each new facility would also be required to undergo a full compliance assessment according to the requirement of the National Environmental Policy Act and Section 106 of the National Historic Preservation Act. Only facilities that are determined to be necessary and appropriate by the NPS would be proposed in accordance with the park purpose, law and policies (see also previous responses regarding development within appropriate context).

Commercial services are not currently offered in the park, and any new services, if applicable, would be obtained under the requirements of the Concessions Policy Act. Overnight concessions are not currently planned for the park. Each application for an incidental business permit will be reviewed on its own merit, in compliance with all requirements, on a case-by-case basis.

Cultural Resources

Comment: The Commonwealth of Kentucky as part of a settlement agreement (United States of America, Department of Interior, NPS, Et Al. v. Natural Resources and Environmental Protection Cabinet and Appolo Fuels, Inc., PDH-23646-039 and PDH-23650-39, Permit No. 807-0263) established a process of early notification and analysis that applies to any surface mining permit applications that might adversely affect the viewshed of the park. This process applies to any permit application within 5 miles of the park or to any application where any person or entity asserts that the proposed mining operation will adversely affect the park. If the Cabinet determines that there would be an adverse effect, the state provision that mirrors section 522 (e)(3) of the Surface Mining Control and Reclamation Act of 1977 would apply. The federal statute states, in part, that no operations "shall be permitted which will adversely affect (the park) unless jointly approved by the regulatory authority and the Federal agency with jurisdiction over the park". Implementation of this important authority to affect the cultural landscape beyond park boundaries should be discussed in the GMP.

Response: This requirement has been added to Chapter 2, Special Mandates and Policies, as well as Table 2.

Tourism

Comment: Recreate the wagon path from the Wilderness Road alignment in Lee County, Virginia, through the Gap to a wagon Camp on the other side. A concessionaire operation here would seem ideal and various trip styles and lengths could be offered for visitors, with price considerations for the length and type of trips offered. Child oriented trips, trips with chuck wagon meal service; evening trips with campfire sing-a-longs, etc. are possibilities.

Response: During the development of alternatives such ideas were discussed and are open to further consideration during implementation, such as special events and commemorations. In addition, commercial services in the park are addressed under the Concessions Policy Act, via incidental business applications. Each application is reviewed on its own merit, in compliance with all requirements, on a case-by-case basis.

Comment: Re-creation of 1850-60 Town of Cumberland Gap, Tennessee, along with a "Skagway, Alaska" type of business/residential street with concession operated stores/restaurants, jail, etc. Other time-period representations could be alternates.

Response: This area outside the park is not within the scope of this General Management Plan. Proposals for any type of historic recreations in the town of Cumberland Gap are outside the authority of the NPS.

Comment: New Visitor Center/Museum in the Town of Cumberland Gap to be staffed primarily by townspeople with NPS management and oversight to complement the Iron Furnace restoration and to illustrate the various changes in the town transition over time from the Civil War period, trails to highways evolution, influence of English monies invested in minerals extraction, the evolution of Lincoln Memorial University, etc.

Response: The NPS is not authorized to manage or have oversight of a visitor center for the Town of Cumberland Gap that is not owned by the NPS. The NPS does provide information at our existing visitor center regarding Cumberland Gap and area attractions.

Comment: Reopening to the public of Cudjo's Cave as a real attraction suggested to be done by concessionaire. This was successfully done from the 1930's thru 1980's. It provides an excellent underground experience. Gravel pathways remain to accommodate visitors and with the return of highlight style lighting and little other maintenance, some breathtaking scenery is there to enjoy… The potential is here to add to the daily tourism base whereas under current operation, it is by appointment only and shown only with lantern or flashlight.

Response: The NPS provides scheduled, guided tours of the cave that are designed and managed to protect sensitive cave resources. Limited visitation is necessary to preserve cave resources for future generations. Allowing open visitation would cause unacceptable resource impacts.

Comment: Highlight the railroad history of the Gap area, along with a convenient off-site treatment of the history of the Highway Tunnel Project.

Response: Types of interpretive activities are to be addressed in a separate Long Range Interpretation Plan for the park.

Comment: A principle missing link in the ability to package and market the areas tourism future, as well defined in the recent Gateway tourism analysis previously covered, is the lack of quality hotel/motel facilities which could accommodate longer term family vacations. Only a few scattered, motel-type facilities exist at all. One major way of resolving this critical issue has been judged to be enticing private investment to build larger capacity, high quality, full-service resort facilities. These resorts would prepare for its guests, based on their plans, schedules of trips, visits to attractions, specialized activities for spelunking, skydiving, bicycling, etc. based on the requests of future visitors. Personal guides could also be arranged, when desired. With quality resort services leading the way, more shorter-stay facilities for the area would be built.

With the onset of this Master Plan update, the NPS can take the lead in securing this missing link. It should consider a type of concession approach creating a public/private partnership such as previously done in some western parks and elsewhere. Here, a site in a development area of the Park such as Fern Lake would be provided to the potential developer as the incentive to lure private venture capital to invest in construction of the resort facilities.

Response: Due to the sensitive nature of the watershed and drinking water supply of Fern Lake, this area is not an appropriate location for such development (see also the previous responses regarding concession policies).

Interpretation

Comment: We also note that enhanced recreational and educational opportunities for the park from the Cumberland Gap, Tennessee, side would be important. The iron furnace site in Cumberland Gap, Tennessee, has been significantly improved in the past decade. However, the linkage between that site and the Civil War experiences of the region also could be enhanced.

Response: The Iron Furnace pre-dates the Civil War and is but one of many similar resources in the park. The park interprets Civil War history at the visitor center, and will continue to do so by providing wayside exhibits accessible by trail in the future. The wayside exhibits may be similar to the commissary site. The park also partners with Lincoln Memorial University, the National Cemetery in Knoxville (in 1863, approximately 500 civil wars graves were moved from land adjacent to the Daniel Boone Interpretive Center to the Knoxville National Cemetery) and the Mills Spring Battlefield regarding interpretation of Civil War history. Interpretation of the Civil War is also conducted as part of periodic cultural heritage events. For example, the last event attracted over 10,000 people, including over 1,000 school children, and focused on the Civil War.

Comment: Twenty years ago, the Middle Tennessee State University Center for Historic Preservation worked with Cumberland Gap, TN, officials and property owners to create the existing historic district in the town. Through effective partnerships, it also can be a powerful partner for enhancing the turn-of-the-century industrial history story of the park.

Response: The park currently partners with the Town of Cumberland Gap to address historic features of the town, including the Iron Furnace. Under the preferred alternative (C) the level of formal partnering will increase.

Comments	Responses

COMMONWEALTH of VIRGINIA

Department of Historic Resources

L. Preston Bryant, Jr.
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Kathleen S. Kilpatrick
Director

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January 12, 2010

Mark H. Woods, Superintendent
National Park Service
Cumberland Gap National Historical Park
US 25E South
P. O. Box 1848
Middlesboro, KY 40965-1848

Re: Draft General Management Plan/Environmental Impact Statement
Cumberland Gap National Historical Park
Lee County, Virginia
DHR File No. 2004-1271

Dear Mr. Woods:

Thank you for requesting our comments on the draft General Management Plan prepared for the Cumberland Gap. We fully support the National Park Service's selection of Alternative C as the park's preferred alternative. Alternative C best fits the park's mission of interpretation and education by providing additional opportunities for visitor access. Alternative C also includes provision for public private partnership for better preservation of the park's irreplaceable historic properties as well as better contributing to heritage tourism and the economic development of the area..

We also agree that other more detailed studies and plans are highly desirable and will be needed for implementation of specific actions to achieve the desired outcomes presented in the General Management Plan. We are very willing to work with the park as it conducted the following studies outlined in Chapter 5 of the GNP. These include development of a **Resource Stewardship Strategy**, **Cultural Landscape Inventory** needed for the Hensley Settlement, Cumberland Gap Historic District, and any other identified cultural landscapes located within the park, a **Cultural Landscape Report** for all identified cultural landscapes, **Historic Structure Reports, Historic Structures Preservation Guides for Hensley Settlement, Cultural Resource Surveys, a Baseline Inventory of Cultural Resources in Gap Cave,** an **Archeological Overview and Assessment,** a **Collections Management**

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Roanoke Region Office
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Northern Region
Preservation Office
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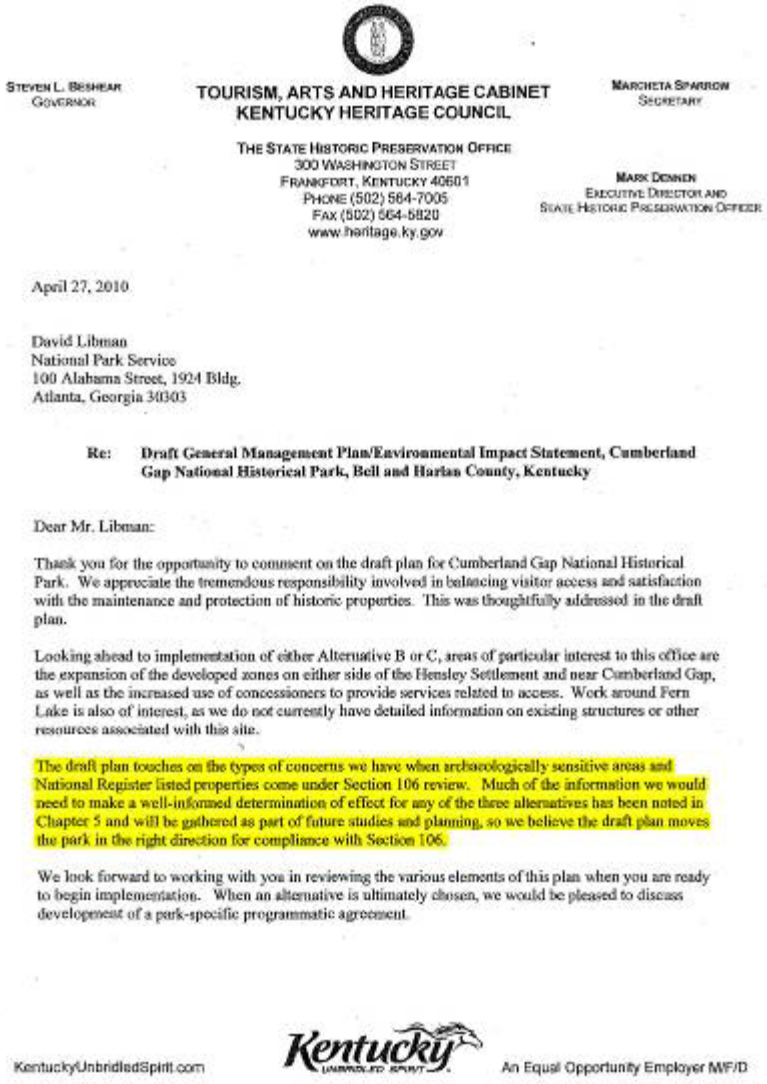
Comments	Responses
Plan, a Scope of Collections Statement, a Museum Collection Management and Emergency Plan, and a revised **Farm Management and Interpretive Plan for the Hensley Settlement.** If the park is not already doing so, we encourage you to continue to computerize **the** inventory of historic resources, including adding the **Geographic Information System** data to the appropriate state databases. As you know, Virginia's computerized inventory is our Data Sharing System (DSS) and National Park Service staff may obtain a license to enter or access data throughout the Commonwealth free of charge in accordance with the information sharing provisions of the 2008 Nationwide Programmatic Agreement executed among the National Park Service, the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers. 1. We agree that implementation of the General Management Plan is an undertaking subject to Section 106 of the National Historic Preservation Act. However, we cannot agree with the approach to Section 106 presented in the Section 106 summary nor can we agree with a determination of No Adverse Effect at this time. In our opinion effects cannot be determined at this time. The identification of historic properties is clearly not complete. We do not doubt the park's intent to avoid any effects to historic properties. However, the park may find that it is not be practicable and reasonable to do so in all cases. Should the park wish to continue to treat the implementation of the General Management Plan as one whole and entire undertaking, we recommend that a programmatic agreement be developed with all three states pursuant to Part 800.14(b) (1) (ii) of the Council's regulations. The 2008 Programmatic Agreement provides a practical approach to compliance with Section 106 for specific actions once the General Management Plan is completed and we suggest that consultation with SHPOs, THPOs, federally recognized tribes, other stakeholders and the public be conducted on these specific actions as more detailed plans become available. Please note that it is not necessary to consult with the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers under the terms of the Nationwide Programmatic Agreement to determine what individual actions are programmatic exclusions, and what actions will require review. The Streamlined Review Process is described in Stipulation III, including a list of "programmatic exclusions", or actions eligible for Streamlined Review (Stipulation III.C). According to the Nationwide Programmatic, Superintendents are to call a biennial meeting within six months of the date of execution of that agreement. We would be happy to participate by teleconference to discuss how the park wishes to proceed to implement the General Management Plan and/or the terms of the Nationwide Programmatic Agreement. It would be helpful for us, for example, to have the names of and the contact information for the park's 106 coordinator and the CRM Team members. If you have any questions concerning our comments, or if we may provide any further assistance, please do not hesitate to contact me at (804) 367-2323, ext. 112; fax (804) 367-2391; e-mail eeaton@dhr.state.va.us. Administrative Services 10 Courthouse Ave. Petersburg, VA 23803 Tel: (804) 862-6416 Fax: (804) 862-6196 Capital Region Office 2801 Kensington Office Richmond, VA 23221 Tel: (804) 367-2323 Fax: (804) 367-2391 Tidewater Region Office 14415 Old Courthouse Way 2nd Floor Newport News, VA 23608 Tel: (757) 886-2807 Fax: (757) 886-2808 Roanoke Region Office 1030 Penner Avenue, SE Roanoke, VA 24013 Tel: (540) 857-7585 Fax: (540) 857-7588 Northern Region Preservation Office P.O. Box 519 Stephens City, VA 22655 Tel: (540) 868-7029 Fax: (540) 868-7033	1. The park regularly uses GIS to update information on cultural resources in the park. The park will continue to provide this information to the state SHPOs so they can incorporate this information and keep their records current. 2. The NPS has conferred with the Virginia State Historic Preservation Officer on this comment. The text of the General Management Plan has been changed to state that adverse effects could potentially occur. However, because of the fact that specific future project designs are not yet available, a final conclusion regarding effects cannot be made. When specific projects are proposed that have a potential to affect cultural resources, they will undergo a full compliance review, to include Section 106 and National Environmental Policy Act assessments. These assessments will be tiered to the information in the General Management Plan / Environmental Impact Statement. 3. The NPS will continue to consult with state Historic Preservation Officers, Tribal Historic Preservation Officers, and federally recognized tribes as required during the implementation phase of the General Management Plan. Note Response #2.

Comments	Responses
Sincerely, Ethel R. Eaton, Ph.D., Senior Policy Analyst Office of Review and Compliance Sincerely, Ethel R Eaton Ethel R. Eaton, Ph.D., Senior Policy Analyst Division of Resource Services and Review Administrative Services 10 Courthouse Ave. Petersburg, VA 23803 Tel: (804) 862-6416 Fax: (804) 862-6196 Capital Region Office 2801 Kensington Office Richmond, VA 23221 Tel: (804) 367-2323 Fax: (804) 367-2391 Tidewater Region Office 14415 Old Courthouse Way 2nd Floor Newport News, VA 23608 Tel: (757) 886-2807 Fax: (757) 886-2808 Roanoke Region Office 1030 Penmar Avenue, SE Roanoke, VA 24013 Tel: (540) 857-7585 Fax: (540) 857-7588 Northern Region Preservation Office P.O. Box 519 Stephens City, VA 22655 Tel: (540) 868-7029 Fax: (540) 868-7033	

Comments	Responses
 TENNESSEE HISTORICAL COMMISSION DEPARTMENT OF ENVIRONMENT AND CONSERVATION 2941 LEBANON ROAD NASHVILLE, TN 37243-0442 (615) 532-1550 January 6, 2010 Mr. Mark H. Woods Cumberland Gap National Historic Park Post Office Box 1848 Middlesboro, Kentucky, 40965-1848 RE: NPS, CGNHP/GENERAL MANAGEMENT PLAN, CUMBERLAND GAP, CLAIBORNE COUNTY Dear Mr. Woods: In response to your request, received on Wednesday, December 16, 2009, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicant for federal assistance to consult with t he a ppropriate S tate H istoric P reservation O ffice bef ore t hey c arry o ut their p roposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800. You may wish to familiarize yourself with these procedures (Federal Register, December 12, 2000, pages 77698-77739) if you are unsure about the Section 106 process. 1. Considering available information, we find that the project as currently proposed MAY AFFECT PROPERTIES THAT ARE ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. You should continue consultation with our office, designated consulting parties and invite them to participate in consultation, and provide us with appropriate survey documentation for review and comment. Please direct questions and comments to Joe Garrison (615) 532-1550-103. We appreciate your cooperation. Sincerely, E. Patrick McIntyre Executive Director and State Historic Preservation Officer EPM/jyg	1. The National Park Service has conferred with the Tennessee State Historic Preservation Officer on this comment. The text of the General Management Plan has been changed to state that adverse effects could potentially occur. However, because of the fact that specific future project designs are not yet available, a final conclusion regarding effects cannot be made. When specific projects are proposed that have a potential to affect cultural resources, they will undergo a full compliance review, to include Section 106 and National Environmental Policy Act assessments. These assessments will be tiered to the information in the General Management Plan / Environmental Impact Statement. The NPS will consult further with your office during the implementation phase of the General Management Plan, as required.

Comments	Responses
	1. Thank you for your letter response. The NPS will coordinate and consult with the Kentucky State Preservation Officer during the implementation phase of the General Management Plan.

STEVEN L. BESHEAR
GOVERNOR

TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL

MARCHETA SPARROW
SECRETARY

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MARK DENNEN
EXECUTIVE DIRECTOR AND
STATE HISTORIC PRESERVATION OFFICER

April 27, 2010

David Libman
National Park Service
100 Alabama Street, 1924 Bldg.
Atlanta, Georgia 30303

Re: Draft General Management Plan/Environmental Impact Statement, Cumberland Gap National Historical Park, Bell and Harlan County, Kentucky

Dear Mr. Libman:

Thank you for the opportunity to comment on the draft plan for Cumberland Gap National Historical Park. We appreciate the tremendous responsibility involved in balancing visitor access and satisfaction with the maintenance and protection of historic properties. This was thoughtfully addressed in the draft plan.

Looking ahead to implementation of either Alternative B or C, areas of particular interest to this office are the expansion of the developed zones on either side of the Hensley Settlement and near Cumberland Gap, as well as the increased use of concessioners to provide services related to access. Work around Fern Lake is also of interest, as we do not currently have detailed information on existing structures or other resources associated with this site.

The draft plan touches on the types of concerns we have when archaeologically sensitive areas and National Register listed properties come under Section 106 review. Much of the information we would need to make a well-informed determination of effect for any of the three alternatives has been noted in Chapter 5 and will be gathered as part of future studies and planning, so we believe the draft plan moves the park in the right direction for compliance with Section 106.

We look forward to working with you in reviewing the various elements of this plan when you are ready to begin implementation. When an alternative is ultimately chosen, we would be pleased to discuss development of a park-specific programmatic agreement.

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Comments	Responses
Page 2 David Libman 4/26/2010 If you have questions regarding these comments, please contact Jill McNutt (ext. 121) or Lori Stahlgren (ext. 151) of my staff at (502) 564-7005. Sincerely, Mark Dennen Executive Director and State Historic Preservation Officer MD:jm KentuckyUnbridledSpirit.com Kentucky UNBRIDLED SPIRIT An Equal Opportunity Employer M/F/D	

Comments	Responses

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

January 4, 2010

David Libman
National Park Service Southeast Region
Atlanta Federal Center
1924 Building
100 Alabama Street, S.W.
Atlanta, Georgia 30303

SUBJECT: Draft General Management Plan/Environmental Impact Statement for the Cumberland Gap National Historical Park in Middlesboro, Kentucky; CEQ Number 20090371

Dear Mr. Libman:

The U.S. Environmental Protection Agency (EPA) has reviewed the referenced Draft General Management Plan/Environmental Impact Statement (EIS) in accordance with its responsibilities under Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act. The purpose of this general management plan and Draft EIS is to present a plan for managing the Cumberland Gap National Historical Park (CGNHP) in Middlesboro, Kentucky, for the next 15 to 20 years. The National Park Service (NPS) is the lead federal agency for the proposed action.

1. General management plans represent the broadest level of planning conducted by the NPS and are intended to provide overall guidance for making informed decisions about future conditions in national parks. The Draft EIS assesses the environmental impacts of three alternatives (A, B, & C) in terms of levels of service for visitor interpretation and education in the CGNHP, suitable locations for administration and visitor facilities, and management of the CGNHP to allow for preservation of natural and cultural resources. Alternative A is the no action alternative, continuation of present management practices. Alternative B would provide opportunities for enhanced visitor access by providing additional park facilities. Alternative C is identified as the NPS preferred alternative and is similar to Alternative B. However, it would also provide additional park facilities, increased levels of education, outreach, and formalized partnering efforts.

The concept of Alternative C is to provide greater opportunities for visitor access and facilities in the park. This would be achieved primarily by having larger developed zones than the other alternatives. The total area of the developed zone in Alternative C would be over twice as large as the development zone in Alternative A, the no action alternative. Therefore, Alternative C would have a greater relative amount of land disturbing activity, as compared to the other alternatives, due to an increase in "hardened" types of access (e.g., parking areas, roads,

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Comments	Responses
and camping areas) and development of support facilities. However, the numbers and types of new facilities would be limited to protect natural and cultural resources in the park. New facilities would be proposed within the context of their location within the management zone. Sustainable designs and practices would be implemented wherever possible, and new facilities would be unobtrusive. 1. A number of mitigation measures are proposed in the Draft EIS to avoid or minimize potentially adverse impacts from implementation of the new management plan and to ensure that the park's natural and cultural resources are protected and preserved for future visitors. EPA supports inclusion of these mitigation measures as part of the new general management plan for CGNHP, particularly the commitment to develop a resource stewardship strategy, including an updated cave management plan. EPA recommends that these programs include significant monitoring activities to ensure that the increase in hardened access areas and likely subsequent increase in recreational and educational usage of the park do not negatively impact natural and cultural resources. This is especially true for the expansion of the developed zone adjacent to Fern Lake, which is a designated public water-supply reservoir. We rate this document LO (Lack of Objections). EPA lacks objections to the proposed project and believes that the Draft EIS provided adequate information on the environmental impacts. All mitigation measures and monitoring programs, as described in the Draft EIS and including the above recommendations, should be fully implemented. We appreciate the opportunity to review the proposed action. Please contact Ben West of my staff at (404) 562-9643 if you have any questions or want to discuss our comments further. Sincerely, Heinz J. Mueller, Chief NEPA Program Office Office of Policy and Management cc: Cumberland Gap National Historic Park 2	1. Site-specific, future plans will be consistent with park purpose, law, policy and be sustainable. Proposed actions will include environmental compliance documentation and opportunities for public input. This will include appropriate mitigation measures to avoid or minimize potentially adverse impacts. Monitoring will also be addressed during the implementation phase for site specific projects.

	Comments	Responses
	From: Mike Floyd Sent: 01/17/2010 04:07 PM EST To: Mark Woods Cc: Lee Andrews/R4/FWS/DOI@FWS Subject: General Mgmt Plan / EIS for Cumb Gap NHP FWS #2010-B-0165 Mr. Woods,	
1.	Thank you for providing a copy of the Draft General Management Plan and EIS for Cumberland Gap National Historical Park (CGNHP). As we have discussed in the past, our primary concern regarding fish and wildlife resources at CGNHP is the continued protection and conservation of listed species, specifically blackside dace (Chrosomus cumberlandensis) and Indiana bat (Myotis sodalis). We appreciate your recent efforts and willingness to work with us in restoring the blackside dace population in Davis Branch, and we look forward to working with you in that and similar efforts in the future. We have completed our review of the draft documents and have no further, substantive comments at this time. Please let us know if we can be of further assistance in the planning process. Sincerely, Michael A. Floyd, PhD U.S. Fish & Wildlife Service Kentucky ES Field Office J C Watts Federal Bldg 330 West Broadway St., Room 265 Frankfort, Kentucky 40601 502-695-0468, x102 502-695-1024 (fax) 502-229-5433 (cell) mike_floyd@fws.gov	1. The NPS will continue to coordinate and consult with the United States Fish and Wildlife Service regarding listed species.

	Comments	Responses
1.	**DRAFT PLAN COMMENTS** **Steve Roark, Forester** **Tennessee Division of Forestry** **2178 Hwy 25 E, Suite 1** **Tazewell, TN 37879** Alternative C is the best choice, as it will provide the greatest increase in use opportunities for visitors and enhance their enjoyment of the park. It will also increase tourism to the area and thus help the local economy. I would include myself as a high use visitor. Some points I particularly liked in reviewing alternative C are as follows: **Increase levels of education/outreach**: Interpretive opportunities of the park's history will always be important. The park can also provide an important backdrop to provide educational opportunities on the importance of natural resources and their protection. As a forester I find a disturbing disconnect between people and nature. And I fear that lack of education about natural resources leads to a lack of care, or perhaps misguided care. While on the subject of interpretation, I would like to suggest the establishment of some plant communities that existed in the area before the arrival of Europeans. The three that show up regularly in old travel journals are open woodlands or savannahs, stands of native warm season grasses, and canebrakes. Since the park has a burn module, the creation or enhancement of these cover types through use of fire seems doable. I would think they could be established in one of the Cultural Resource Zones, as these cover types were intimately connected to Native Americans. And it would be interesting to show what the landscape perhaps looked like when the Europeans started poking around. Most people think the area was an undisturbed "forest primeval", which is incorrect. **New facilities** will be designed and installed to minimize negative impacts; sounds proper and good. **Fern Lake Development**: I'm particularly excited about the addition of the Fern Lake area to the park's protective umbrella. Protecting the lake's watershed is a tremendous accomplishment on many fronts, clean water and maintaining viewsheds being two of particular importance. Developing hiking trails (with care) in the area would also be a desirable enhancement. I would like to put in a plug for public use of the lake itself whenever it is purchased and under park control. Fishing and (non-motorized) boating would be wonderful additions to the park's "things to do" **Hensley Settlement Access**: I strongly approve of the development of a satellite parking area near the bottom of Shillalah Creek Road. I've heard several comments from other hikers that they are fearful of leaving a vehicle parked at the road gate. A developed parking area that will be monitored should put users more at ease. I think the increased accessibility to Hensley Settlement described in Alternative C is reasonable without going overboard. Limiting access to the site by vehicles should continue to be enforced to protect the area. One suggestion I might make is to allow the use of the shuttle buses by hikers who might want to ride up and use the hiking trails on top of the mountain, then ride or walk back off. This might at least be offered to senior citizens.	1. A limited amount of this type of planting has in fact been done in a small plot near the Visitor Center. Additional plots of vegetation could be constructed along the walking trails in the vicinity of the Visitor's Center, but this type of project is not planned for other areas of the park at the present time. Trees displayed in the refinished Visitor Center are also used to show what types of large, old growth were present in the park before the arrival of Europeans. In addition, natural stands of some historic vegetation such as cane breaks already occur in the park and can be seen by visitors along Old Yellow Creek.

LIST OF RECIPIENTS

Notices of availability of the Draft General Management Plan / Environmental Impact Statement were mailed to the list of recipients provided in Appendix K.

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References and Glossary of Terms

Cleopatra's Bath Tub, Gap Cave

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GLOSSARY OF TERMS

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GLOSSARY OF TERMS

The controlling definitions for terms under the President's Council on Environmental Quality National Environmental Policy Act regulations are contained at 40 Code of Federal Regulations; the numbers in parentheses refer to the appropriate section. These definitions are provided as a supplement to those regulatory definitions.

Aesthetic resources—The intangible perceptions possible in parks, such as natural quiet, solitude, and the experience of nighttime skies.

Categorical exclusion (1508.4)—An action with no measurable environmental impact which is described in one of the categorical exclusion lists in section 3-3 or 3-4 and for which no exceptional circumstances (section 3-5) exist.

Connected actions (1508.25)—Actions that are closely related. They automatically trigger other actions that have environmental impacts; they cannot or will not proceed unless other actions have been taken previously or simultaneously, or they are interdependent parts of a larger action and/or depend on the larger action for their justification.

Conservation planning and impact assessment—Within the National Park Service, this process is synonymous with the National Environmental Policy Act process. This process evaluates alternative courses of action and impacts so that decisions are made in accord with the conservation and preservation mandate of the NPS Organic Act.

Cooperating agency (1508.5)—A federal agency other than the one preparing the National Environmental Policy Act document (lead agency), that has jurisdiction over the proposal by virtue of law or special expertise and that has been deemed a cooperating agency by the lead agency. State or local governments and/or Indian tribes, may be designated cooperating agencies as appropriate (see 1508.5 and 1502.6).

Cultural resources (NPS-28, appendix A)—Aspects of a cultural system that are valued by or significantly representative of a culture or that contain significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places and as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources for NPS management purposes.

Cumulative actions (1508.25)—Actions that, when viewed with other actions in the past, the present, or the reasonably foreseeable future, regardless of who has undertaken or will undertake them, have an additive impact on the resource the proposal would affect.

Cumulative impact (1508.7)—The impacts of cumulative actions.

Direct effect (1508.8)—An impact that occurs as a result of the proposal or alternative in the same place and at the same time as the action.

Environmental assessment (EA) (1508.9)—A brief National Environmental Policy Act document that is prepared to, (a) help determine whether the impact of a proposal or alternatives could be significant; (b) aid the National Park Service in compliance with the National Environmental Policy Act by evaluating a proposal that will have no significant impacts, but that may have measurable adverse impacts; or (c) evaluate a proposal that either is not described on the list of categorically excluded actions, or is on the list but exceptional circumstances (section 3-5) apply.

Environmental impact statement (EIS) (1508.11)—A detailed National Environmental Policy Act document that is prepared when a proposal or alternatives have the potential for significant impact on the human environment.

Environmental screening process—The analysis that precedes a determination of the appropriate level of National Environmental Policy Act documentation. The minimum requirements of the environmental screening process are a site visit, consultation with any agency that has jurisdiction by law or special expertise, and the completion of a screening checklist. The process must be complete for all NPS actions that have the potential for environmental impact and are not described in section 3-3.

Environmentally preferred alternative (1505.2, Q6a)—Of the alternatives analyzed, the one that would best promote the policies in the National Environmental Policy Act section 101. This is usually selected by the interdisciplinary team members. It is presented in the NPS National Environmental Policy Act document (draft and final environmental assessment or environmental impact statement) for public review and comment.

Exceptional circumstances—Circumstances that, if they apply to a project described in the NPS categorical exclusion lists (sections 3-3 and 3-4), mean a categorical exclusion is inappropriate and an environmental assessment or an environmental impact statement must be prepared because the action may have measurable or significant impacts. Exceptional circumstances are described in section 3-5.

Finding of no significant impact (FONSI) (1508.13)—A determination based on an environmental assessment and other factors in the public planning record for a proposal that, if implemented, would have no significant impact on the human environment.

General Management Plan (GMP) — Broad decisions about the kinds of resource conditions and visitor experiences the park should provide over the long term.

Human environment (1508.14)—Defined by the Council on Environmental Quality as the natural and physical environment and the relationship of people with that environment (1508.14). Although the socioeconomic environment receives less emphasis than the physical or natural environment in the Council on Environmental Quality regulations, the National Park Service considers it an integral part of the human environment.

Impact topics—The specific natural, cultural, or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The magnitude, duration, and timing of the effect to each of these resources are evaluated in the impact section of an environmental assessment or environmental impact statement.

Implementation Plan— Any of a great variety of plans, such as resource management plans, comprehensive interpretive plans, collection management plans, concession management plans, visitor experience and resource protection (VERP) plans, comprehensive interpretive plans, backcountry management plans, wilderness management plans, site development plans, river management plans, and historic structure reports, that specify how a project or activity should be implemented.

Indirect impact (1508.8)—Reasonably foreseeable impacts that occur removed in time or space from the proposed action. These are "downstream" impacts, future impacts, or the impacts of reasonably expected connected actions (e.g., growth of an area after a highway is complete).

Input—Something, like money or manpower, needed to produce a product or conduct an activity. The Government Performance and Results Act makes a distinction between outcomes (results), outputs (efforts/products/activities), and inputs (money, manpower, and other things needed to produce an output).

Interpretation—The translation of scientific and academic information about park resources into forms that are meaningful to the public, helping them understand and appreciate their natural and cultural heritage**.**

Issues—In the National Environmental Policy Act, issues are environmental, social, and economic problems or effects that may occur if the proposed action or alternatives (including no action) are implemented or continue to be implemented.

Law—The U.S. Congress directs the National Park Service and other federal agencies to carry out certain activities or to achieve certain conditions that it specifies in laws. The National Park Service must comply with these laws and may be sued in court for failure to comply.

Lead agency (1508.16)—The agency either preparing or taking primary responsibility for preparing the National Environmental Policy Act document.

Life Cycle Costing (Analysis)—An accounting method that analyzes the total costs of a product or service, including construction, maintenance, manufacturing, marketing, distribution, useful life, salvage, and disposal.

Management Prescription— A decision about what kinds of resource conditions and visitor experiences should occur in a particular location within a park. Prescriptions are established for each distinctive location (management

zone) within a park and specify (1) the desired condition of natural and cultural resources, (2) the desired visitor experience, (3) appropriate kinds and levels of management activities, (4) appropriate kinds and levels of visitor activities, and (5) appropriate kinds and levels of development.

Management Zone—An area within a park that will be managed distinctively from other areas, to achieve different resource conditions and visitor experiences.

Major federal action (1508.18)—Actions that have a large federal presence and that have the potential for significant impacts to the human environment. They include adopting policy, implementing rules or regulations; adopting plans, programs, or projects; ongoing activities; issuing permits; or financing projects completed by another entity.

Memo to file—A memo to the planning record or statutory compliance file that NPS offices may complete when (a) National Environmental Policy Act has already been completed in site-specific detail for a proposal, usually as part of a document of larger scope, or (b) a time interval has passed since the National Environmental Policy Act document was approved, but information in that document is still accurate.

Mitigated Environmental Assessment (Q40)—An environmental assessment that has been rewritten to incorporate mitigation into a proposal or to change a proposal to reduce impacts to below significance.

Mitigation (1508.20)—A modification of the proposal or alternative that lessens the intensity of its impact on a particular resource.

Natural resources—The ecological features of a park, such as geologic forms and processes, communities of native plants and animals and the processes that sustain them (natural succession, natural fire, natural flood/drought cycles, etc.), air quality and air quality related values such as visibility, water bodies and hydrologic processes, and paleontological remains.

National Environmental Policy Act process—The objective analysis of a proposal to determine the degree of its environmental and interrelated social and economic impacts on the human environment, alternatives and mitigation that reduce that impact, and the full and candid presentation of the analysis to, and involvement of, the interested and affected public.

Notices of availability—Separate notices submitted to the Federal Register that the draft environmental impact statement and the final environmental impact statement are ready for distribution.

Notice of intent (1508.22)—The notice submitted to the Federal Register that an environmental impact statement will be prepared. It describes the proposed action and alternatives, identifies a contact person in the National Park Service, and gives time, place, and descriptive details of the agency's proposed scoping process.

Outcome—A result, usually expressed in terms of resource conditions or visitor experiences. The Government Performance and Results Act makes a distinction between outcomes (results), outputs (efforts/products/activities), and inputs (money, manpower, and other things needed to produce an output).

Output—An effort, product, or activity. The Government Performance and Results Act makes a distinction between outcomes (results), outputs (efforts/products/activities), and inputs (money, manpower, and other things needed to produce an output).

Park—For the purposes of this document, the terms national park or park refer to any unit of the national park system. Although national park system designations formally categorize units as national parks, national preserves, national monuments, national historic sites, national historical parks, national memorials, national recreation areas, national lakeshores, national seashores, national rivers, national battlefields, or national cemeteries, all units of the national park system are managed under a single set of laws and policies with the only distinctions being special mandates included in the specific legislation applying to each particular unit.

Park purpose—The reasons why a park is so important that it has been set aside as a unit of the national park system.

Park significance—The relative international, national, or regional importance of the resources that contributed to the park's addition to the national park system

Plan—The documentation of a decision or decisions and all the factors that were considered during the decision making. The National Park Service produces four kinds of plans: general management plans, strategic plans, implementation plans, and annual performance plans. Each of these is described separately in the glossary.

Planning—Structured decision making.

Policy—The National Park Service establishes specific criteria and procedures for how it will conduct its activities and carry out its mission. These policies apply to all NPS activities in all units of the National Park System. Park managers must comply with NPS policies, and the National Park Service may be sued in court for failure to comply with its own policies.

Potential Wilderness—A wilderness study may identify lands that are surrounded by or adjacent to lands proposed for wilderness designation but that do not themselves qualify for immediate designation due to temporary nonconforming or incompatible conditions. The wilderness recommendation forwarded to the Congress by the President may identify these lands as "potential" wilderness for future designation as wilderness when the nonconforming use has been removed or eliminated. If so authorized by Congress, these potential wilderness areas will become designated wilderness upon the Secretary's determination, published in the Federal Register, that they have finally met the qualifications for designation by the cessation or termination of the nonconforming use.

Preferred alternative (1502.14 (e))—The alternative an NPS decision-maker has identified as preferred at the draft environmental impact statement stage or environmental assessment. Identification of the preferred alternative helps the public focus its comments during review of the National Environmental Policy Act document.

Programmatic documents—Broader scope environmental assessments or environmental impact statements that describe the impacts of proposed policy changes, programs, or plans.

Proposal (1508.23)—The stage at which the National Park Service has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal. The goal can be a project, plan, policy, program, and so forth. The National Environmental Policy Act process begins when the effects can be meaningfully evaluated.

Regulation—Federal agencies establish specific criteria and procedures for how they will comply with laws. These regulations must be reviewed and approved through a formal process, then they are compiled in the Code of Federal Regulations (CFR). The National Park Service must comply with all applicable federal regulations, including those promulgated by other agencies having legal jurisdiction over certain aspects of all federal activities, and it may be sued in court for failure to comply.

Record of decision (1505.2)—The document that is prepared to substantiate a decision based on an environmental impact statement. It includes a statement of the decision made, a detailed discussion of decision rationale, and the reasons for not adopting all mitigation measures analyzed, if applicable.

Recommended Wilderness—The Secretary of the Interior is responsible for recommending to the President those lands under his/her jurisdiction that are suitable or nonsuitable for inclusion within the national wilderness preservation system. The Secretary performs this function through the Assistant Secretary's Office by reviewing NPS proposed wilderness and either approving or revising the proposal. The final result is forwarded by the Secretary for the President's consideration. The President is then responsible for transmitting his recommendations with respect to wilderness designation to both houses of Congress. These recommendations must be accompanied by maps and boundary descriptions. The National Park Service will track the status of the wilderness designation process in Congress.

Resource—Something of value (an asset). Park managers often speak in terms of the aesthetic, cultural, and natural resources of parks, meaning the parks' major features. [See also aesthetic resource, cultural resource, and natural resource.] The term is also used less frequently to describe the funding and manpower available to managers.

Scoping (1508.25)—Internal NPS decision-making on issues, alternatives, mitigation measures, the analysis boundary, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, defining purpose and need, and so forth. External scoping is the early involvement of the interested and affected public.

Strategic Plan—A plan describing what a park staff hopes to achieve within the next six years. These plans, required by the Government Performance and Results Act, should include measurable results-oriented goals that the park staff can use to prioritize work and measure progress.

Tiering (1508.28)—The use of broader, programmatic National Environmental Policy Act documents to discuss and analyze cumulative regional impacts and define policy direction, and the incorporation by reference of this material in subsequent, narrower documents to avoid duplication and focus on issues "ripe for decision" in each case.

Wilderness—National Park Service lands will be considered eligible for wilderness if they are at least 5,000 acres or of sufficient size to make practicable their preservation and use in an unimpaired condition, and if they possess the following characteristics (as identified in the Wilderness Act): the earth and its community of life are untrammeled by humans, where humans are visitors and do not remain; the area is undeveloped and retains its primeval character and influence without permanent improvements or human habitation; the area generally appears to have been affected primarily by the forces of nature, with the imprint of humans' work substantially unnoticeable; the area is protected and managed so as to preserve its natural conditions; the area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation.

Wild Caving—Ranger-led exploration of caves that are completely underground, and which occur in areas of the cave system that are not normally open to the general public. Wild caving also presents an increased level of physical and psychological challenge for visitors interested in this type of activity.

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Appendices

Photograph Courtesy of: Dr. Chuck Summers

Cumberland Gap National Historical Park
Final General Management Plan/
Environmental Impact Statement

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APPENDIX A
CUMBERLAND GAP NATIONAL HISTORICAL PARK LEGISLATION

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B: LEGISLATION

Cumberland Gap National Historical Park project

Establishment of park authorized.....Act of June 11, 1940
Amend Act of June 11, 1940, concerning requirements for establishment of the park.....Act of May 26, 1943

An Act To provide for the establishment of the Cumberland Gap National Historical Park in Tennessee, Kentucky, and Virginia, approved June 11, 1940 (54 Stat. 262) [1]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Cumberland Gap National Historical Park, Tenn., Ky., and Va.

That when title to all the lands, structures, and other property in the Cumberland Gap-Cumberland Ford areas, being portions of the Warriors Path of the Indians and Wilderness Road of Daniel Boone, within Bell and Harlan Counties, Kentucky; Lee County, Virginia; and Claiborne County, Tennessee; as may be determined by the Secretary of the Interior as necessary or desirable for national historical park purposes, shall have been vested in the United States such area or areas shall be, and they are hereby, established, dedicated, and set apart as a public park for the benefit and inspiration of the people and shall be known as the "Cumberland Gap National Historical Park": *Provided,* That the United States shall not purchase by appropriation of public moneys any lands within the aforesaid areas: *Provided further,* That such area or areas shall include, at least, the following features and intervening lands: Cumberland Gap, The Pinnacle, the remaining fortifications of the War between the States, Soldiers Cave, King Solomon's Cave, Devils Garden, Sand Cave, The Doublings, White Rocks, Rocky Face, Moore Knob, and that portion of the Warriors Path and Daniel Boone's Wilderness Road extending from the city of Cumberland Gap, Tennessee, to Cumberland Ford, near Pineville, Kentucky. (16 U.S.C. sec. 261.)

Establishment of, upon acquisition of title to lands etc., by U. S.

Provisos.

Restriction on use of funds.

Lands, etc., to be included.

Limitation on area.

Lands excluded.

SEC. 2. The total area of the Cumberland Gap National Historical Park, as determined pursuant to this Act, shall not exceed fifty thousand acres, and shall not include any land within the city limits of Middlesboro and Pineville, Kentucky; Cumberland Gap, Tennessee; or any lands adjacent thereto which the proper officials thereof shall indicate to the Secretary of the Interior prior to the establishment of said park are required for expansion of said cities. (16 U.S.C. sec. 262.)

Acceptance of donations of land, etc., authorized.

SEC. 3. That the Secretary of the Interior be, and he is hereby authorized to accept donations of land, interests in land, buildings, structures, and other property within the boundaries of the said historical park as determined and fixed hereunder, and donations of funds for the purchase

[1] Sections 1 and 2 of this Act were amended by Act of May 26, 1943, immediately following.

and maintenance thereof: *Provided,* That he may acquire on behalf of the United States out of any donated funds, by purchase at prices deemed by him reasonable, or by condemnation under the provisions of the Act of August 1, 1888, such tracts of land within said historical park as may be necessary for the completion thereof. The title to any lands or interests in lands to be acquired pursuant to this Act shall be satisfactory to the Secretary of the Interior. (16 U.S.C. sec. 263.)

Proviso.
Acquisition of certain lands from donated funds.
25 Stat. 357; 40 U.S.C. secs. 257, 258.

SEC. 4. The administration, protection, and development of the aforesaid national historical park shall be exercised under the direction of the Secretary of the Interior by the National Park Service, subject to the provisions of the Act of August 25, 1916 (39 Stat. 535), entitled "An Act to establish a National Park Service, and for other purposes", as amended. **(16 U.S.C. sec. 264.)**

Administration, etc.
16 U.S.C. secs. 1-4.

An Act To amend sections 1 and 2 of the Act approved June 11, 1940 (54 Stat. 262) relating to the establishment of the Cumberland Gap National Historical Park in Tennessee, Kentucky, and Virginia, and to grant the consent of Congress to such States to enter into a compact providing for the acquisition of property for such park, approved May 26, 1943 (57 Stat. 85)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That sections 1 and 2 of the Act approved June 11, 1940 (54 Stat. 262; 16 U.S.C., 1940 edition, title 16, secs. 261, 262), relating to the establishment of the Cumberland Gap National Historical Park, are hereby amended to read as follows:

"That when title to such lands, structures, and other property in the Cumberland Gap-Cumberland Ford areas, being portions of the Warriors Path of the Indians and Wilderness Road of Daniel Boone, within Bell and Harlan Counties, Kentucky; Lee County, Virginia; and Claiborne County, Tennessee; as may be determined by the Secretary of the Interior as necessary or desirable for national historical park purposes, shall have been vested in the United States, such area or areas shall be, and they are hereby, established, dedicated, and set apart as a public park for the benefit and inspiration of the people and shall be known as the Cumberland Gap National Historical Park: *Provided,* That the United States shall not purchase by appropriation of public moneys any lands within the aforesaid areas. (16 U.S.C. sec. 261.)

Establishment.

"SEC. 2. The total area of the Cumberland Gap National Historical Park, as determined pursuant to this Act, shall comprise not less than six thousand acres and shall not exceed fifty thousand acres, and lands may be added to the park following its establishment within the aforesaid limitations. The park shall not include any land within the city limits of Middlesboro and Pineville, Kentucky; Cumberland Gap, Tennessee; which the proper officials

Total area.

Land excluded.

thereof shall indicate to the Secretary of the Interior prior to the establishment of said park are required for expansion of said cities.

Interstate compact.

"(a) The consent of Congress is hereby given to the States of Tennessee, Kentucky, and Virginia to enter into a compact providing for (1) the acquisition of the lands, structures, and other property in the Cumberland Gap-Cumberland Ford areas referred to in section 1 of such Act of June 11, 1940, as amended by this Act, and (2) the transfer of title to such lands, structures, and other property to the United States.

"(b) The right to alter, amend. or repeal this section is hereby expressly reserved." (16 U.S.C. sec. 262.)

Cumberland Gap National Historical Park

Appointment of two United States commissioners authorized.....Act of July 25, 1956
Land acquisition authorized.....Act of July 26, 1961

An Act To amend title 28 of the United States Code to authorize the appointment of two United States commissioners for Cumberland Gap National Historical Park, approved July 25, 1956 (70 Stat. 642)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 631(a) of title 28 of the United States Code is amended by inserting after the third paragraph of such section the following new paragraph:

Cumberland Gap National Historical Park. 62 Stat. 916.

"Two United States commissioners may be appointed for Cumberland Gap National Historical Park. One, whose jurisdiction shall be limited to the portion of the park situated in Kentucky, shall be appointed by the District Court for the Eastern District of Kentucky; the other, whose jurisdiction shall be limited to the portion of the park situated in Tennessee and Virginia, shall be appointed by joint action of the District Courts for the Eastern District of Tennessee and the Western District of Virginia." (28 U.S.C. § 631.)

An Act To authorize the Secretary of the Interior to acquire approximately nine acres of land for addition to Cumberland Gap National Historical Park, and for other purposes, approved July 26, 1961 (75 Stat. 224)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior may acquire for addition to Cumberland Gap National Historical Park the following described land and interests in land, located in Bell County, Kentucky: *Provided*, That appropriated funds may not be used to pay more than one-half the cost of such acquisition.

Cumberland Gap National Historical Park, Ky. Additional lands.

Beginning at a concrete marker on the west boundary of Cumberland Gap National Historical Park and being on the south margin of Avondale Avenue in the city of Middlesboro, Kentucky, and also on the south bank of Davis Branch; thence along the park boundary the following courses and distances:

South 24 degrees 50 minutes west, 196.79 feet; thence south 30 degrees 02 minutes west, 129.95 feet to a stake; thence south 12 degrees 22 minutes west, 31.82 feet; thence south 80 degrees 38 minutes west, 143.36 feet; thence south 88 degrees 04 minutes west, 100 feet; thence north 86 degrees 14 minutes west, 100 feet; thence north 80

degrees 33 minutes west, 100 feet; thence north 77 degrees 42 minutes west, 186.40 feet;

Thence north 82 degrees 51 minutes west, 271.55 feet; thence leaving the park boundary and following along the south right-of-way of Clydesdale Avenue south 71 degrees 39 minutes west, 310 feet, more or less, to the north right-of-way of United States Highway 25E;

Thence along the said highway right-of-way south 82 degrees 09 minutes west, 317 feet, more or less, to its intersection with the north right-of-way of Clydesdale Avenue; thence along the north right-of-way of Clydesdale Avenue north 70 degrees 09 minutes east, 423 feet, more or less, to a point on the park boundary;

Thence with the park boundary the following courses and distances: south 86 degrees 39 minutes west, 261.44 feet; thence south 81 degrees 26 minutes west, 147.66 feet; thence north 6 degrees 55 minutes west, 49.23 feet; thence south 83 degrees 04 minutes west, 980 feet; thence north 6 degrees 55 minutes west, 135 feet, more or less, to a point in the middle of Little Yellow Creek;

Thence leaving the park boundary and up the center of the meanders of Little Yellow Creek, 2,562 feet, more or less, to a point in the middle of Little Yellow Creek which is also a point in the middle of Davis Branch;

Thence leaving Little Yellow Creek and along the center of Davis Branch, 400 feet, more or less, to the south margin of Avondale Avenue; thence with the south right-of-way of Avondale Avenue south 55 degrees 44 minutes east, 5 feet, more or less, to the point of beginning, said tract containing 9.0 acres, more or less. (16 U.S.C. § 265.)

Appropriation.

SEC. 2. There are hereby authorized to be appropriated such sums, but not more than $30,000, as are necessary to carry out the provisions of this Act. (16 U.S.C. § 265 note.)

Public Law 93-477
93rd Congress, H. R. 14217
October 26, 1974

An Act

88 STAT. 1445

To provide for increases in appropriation ceilings and boundary changes in certain units of the National Park System, to authorize appropriations for additional costs of land acquisition for the National Park System, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

National Park System. Appropriation ceilings increases; boundary changes; appropriation authorization.

TITLE I—ACQUISITION CEILING INCREASES

SEC. 101. The limitations on appropriations for the acquisition of lands and interests therein within units of the National Park System contained in the following Acts are amended as follows:

(1) Biscayne National Monument, Florida: Section 5 of the Act of October 18, 1968 (82 Stat. 1188, 1189) is amended by changing "$24,575,000" to "$28,350,000"; 10 USC 450qq-4.

(2) Colonial National Historical Park, Virginia: Section 4 of the Act of July 3, 1930 (46 Stat. 856), as amended (16 U.S.C. 81f) is amended by changing "$2,777,000" to "$10,472,000";

(3) Cumberland Gap National Historical Park, Kentucky and Tennessee: For the acquisition of lands authorized in subsection 301(2) of this Act, there are authorized to be appropriated such sums as may be necessary, but not more than $427,500; 16 USC 285.

(4) Fort Necessity National Battlefield, Pennsylvania: Section 5 of the Act of August 10, 1961, (75 Stat. 336), is amended by changing "$115,000" to "$722,000"; 16 USC 430tt.

(5) Independence National Historical Park, Pennsylvania: Section 6 of the Act of June 28, 1948 (62 Stat. 1061, 1062), as amended (16 U.S.C. 407r), is amended by changing "$11,200,000." to "$12,792,000.";

(6) Indiana Dunes National Lakeshore, Indiana: Section 10 of the Act of November 5, 1966 (80 Stat. 1309, 1312; 16 U.S.C. 406n–9) is amended by changing "$27,900,000" to "$35,526,000";

(7) Moores Creek National Military Park, North Carolina: The Act of September 27, 1944 (58 Stat. 746) is amended by adding the following new section: 16 USC 422a-1.

"SEC. 2. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act, but not more than $243,000 shall be appropriated for the acquisition of lands and interests in lands and not more than $325,000 shall be appropriated for development."; Land acquisition, appropriation. 16 USC 422a-2.

(8) Morristown National Historical Park, New Jersey: Section 3 of the Act of September 18, 1964 (78 Stat. 957) is amended by changing "$281,000" to "$2,111,000"; 16 USC 409g note.

(9) Rocky Mountain National Park, Colorado: For the acquisition of lands authorized in subsection 301(6) of this Act, there are authorized to be appropriated not more than $2,423,740 and for development of such lands there are authorized to be appropriated not more than $718,000;

(10) Virgin Islands National Park, Virgin Islands: Section 4 of the Act of October 5, 1962 (76 Stat. 748; 16 U.S.C. 398f) is amended by changing "$1,250,000" to "$12,250,000";

(11) Apostle Islands National Lakeshore, Wisconsin: Section 8 of the Act of September 26, 1970 (84 Stat. 880) is amended by deleting "$4,250,000" and inserting in lieu thereof "$5,250,000"; 16 USC 460m-7.

(12) Lake Mead National Recreation Area, Arizona and 16 USC 460n-9.

16 USC 460m-9. Nevada: Section 10 of the Act of October 8, 1964 (78 Stat. 1039) is amended by deleting "$1,200,000" and inserting in lieu thereof "$7,100,000"; and

(13) Sleeping Bear Dunes, Michigan: Section 15 of the Act of October 21, 1970 (84 Stat. 1075) is amended by deleting "$19,800,000" and inserting in lieu thereof "$57,753,000".

16 USC 460m-14.

TITLE II—DEVELOPMENT CEILING INCREASES

SEC. 201. The limitations on appropriations for development of units of the National Park System contained in the following Acts are amended as follows:

(1) Channel Islands National Monument, California: For the purposes of development of the administrative site and visitor facilities authorized by section 401 of this Act, there are authorized to be appropriated $2,936,000;

(2) Cumberland Gap National Historical Park, Kentucky and Tennessee: In addition to any funds heretofore appropriated for said national historical park, there are hereby authorized to be appropriated not more than $160,000 for development; and

(3) International Peace Garden, North Dakota: Section 1 of the Act of October 25, 1949 (63 Stat. 888), as amended (68 Stat. 300 and 72 Stat. 985), is amended by changing "$400,000" to "$1,702,000".

TITLE III—BOUNDARY CHANGES

SEC. 301. The Secretary of Interior shall revise the boundaries of the following units of the National Park System:

(1) Biscayne National Monument, Florida: To add approximately 8,738 acres of land and water, including all of Swan Key and Gold Key;

16 USC 267. (2) Cumberland Gap National Historical Park, Kentucky and Tennessee: Notwithstanding the provisions of the Act of June 11, 1940 (54 Stat. 262), as amended (16 U.S.C. 261–265), the Secretary of the Interior is authorized to acquire by donation, purchase with donated or appropriated funds, or exchange not to exceed 60 acres of land or interests in land located in Bell County, Kentucky, and Claiborne County, Tennessee, for addition to and inclusion in the said national historical park which, upon acquisition, shall become a part of the Cumberland National Historical Park subject to the laws, rules, and regulations governing such park;

(3) Fort Necessity National Battlefield, Pennsylvania: To add approximately 411 acres;

(4) Independence National Historical Park, Pennsylvania: To add approximately 4.67 acres, which shall include the area bounded by Chestnut Street, Front Street, Walnut Street, and Second Street, to be known as Project F: *Provided*, That the authority of the Secretary of the Interior to acquire property by condemnation under this Act shall be suspended with respect to all property within the boundaries of the area known as Project F during the time the city of Philadelphia shall have in force and applicable to such property a duly adopted, valid zoning ordinance approved by the Secretary: *And provided further*, That no zoning ordinance or amendment of a zoning ordinance shall be approved by the Secretary which (1) contains any provision which he may consider adverse to the preservation and develop-

ment of the Independence National Historical Park, or (2) fails to have the effect of providing that the Secretary shall receive notice of any variance granted under and any exception made to the application of such ordinance or amendment;

(5) Lava Beds National Monument, California: To add approximately 321.58 acres and to delete approximately 60.12 acres, which additions and deletions shall comprise only federally owned lands, and lands deleted from the monument shall be administered by the Secretary of the Interior in accordance with the Federal reclamation laws;

(6) Morristown National Historical Park, New Jersey: The Act of September 18, 1964 (78 Stat. 957) is amended changing "two hundred and eighty-one acres" in both places in which it appears in the first section to "465 acres" and change the period to a colon and insert "*Provided*, That title to the property known as the Cross estate may not be accepted until the property is vacant." and 16 USC 409g.

(7) Rocky Mountain National Park, Colorado: To add approximately 1,556.21 acres.

TITLE IV—MISCELLANEOUS PROVISIONS

Ventura Marina, Calif., land donation for use in Channel Islands National Monument.

SEC. 401. The Secretary of the Interior is authorized to accept the donation of the fee simple title of not to exceed five acres of land and submerged land within the Ventura Marina, Ventura County, California; and to develop, operate, and maintain thereon administrative and visitor facilities to be used as a mainland headquarters for the Channel Islands National Monument: *Provided*, That no lands or any interests therein may be accepted by the Secretary until a mutually satisfactory agreement has been executed which shall include, among other things, an agreement on the design for such facilities, a reasonable timetable for their construction, and an agreement concerning public use of and access to such facilities. Any property accepted under the provisions of this Act shall be administered as a part of the national monument. Administration.

16 USC 422a-1.

SEC. 402. The Act of September 27, 1944 (58 Stat. 746), providing for the Moores Creek National Military Park is amended by changing the words "accept in behalf of the United States donations of" to "acquire by donation, purchase, or exchange", and by changing "to be accepted" to "acquired".

San Juan National Historic Site, P.R., damage studies.

SEC. 403. (a) The Secretary of the Interior, in cooperation with the Secretary of the Army, shall cause to be conducted such studies as they deem reasonable and necessary to determine the causes and extent of the damage to the foundations of the historic structures of the San Juan National Historic Site and shall transmit to the Congress, as soon as possible, but no later than one year after the date of the enactment of this Act, the alternative courses of action, together with their recommendations, which might be taken to assure the historical integrity of such structures and the safety of the visiting public. Pending the submission of such recommendations, the Secretary of the Interior shall take every reasonable precaution to assure the public safety and the maximum public enjoyment of the historic site. Transmittal to Congress.

Appropriation.

(b) To carry out the purposes of this section, there are authorized to be appropriated such sums as may be necessary, but not more than $100,000.

Ohio and Erie Canal, Ohio, study.

SEC. 404. (a) The Secretary of the Interior is authorized and directed to undertake a study of the most feasible and suitable means of preserving and interpreting for the benefit of the public the historic and natural resources of the Ohio and Erie Canal in the State of Ohio,

together with associated and related lands. In carrying out the study the Secretary shall consider existing and proposed State and local highway plans, land-use plans, outdoor recreation plans, and related plans for the preservation of historic and natural resources. Not later than one year from the date of enactment of this Act the Secretary shall submit to the Congress a report of such study, including his recommendations as to the means of protecting, interpreting, and developing the resources of the Ohio and Erie Canal and adjacent lands.

Report to Congress.

Appropriation.

(b) To carry out the purposes of this section, there are authorized to be appropriated such sums as may be necessary, but not more than $40,000.

Additional appropriations.
42 USC 4603.

Sec. 405. (a) In all instances where authorizations of appropriations for the acquisition of lands for the National Park System enacted prior to January 9, 1971, do not include provisions therefor, there are authorized to be appropriated such additional sums as may be necessary to provide for moving costs, relocation benefits, and other expenses incurred pursuant to the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646; 84 Stat. 1894). There are also authorized to be appropriated not to exceed $8,400,000 in addition to those authorized in Public Law 92-272 (86 Stat. 120) to provide for such moving costs, relocation benefits, and other related expenses in connection with the acquisition of lands authorized by Public Law 92-272.

42 USC 4601 note.
16 USC 459f-10.

Waiver.

(b) Whenever an owner of property elects to retain a right of use and occupancy pursuant to any statute authorizing the acquisition of property for purposes of a unit of the National Park System, such owner shall be deemed to have waived any benefits under sections 203, 204, 205, and 206 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (84 Stat. 1894), and for the purposes of those sections such owner shall not be considered a displaced person as defined in section 101(6) of that Act.

42 USC 4623-4626.
42 USC 4601.

Cape Lookout National Seashore, N. C.
16 USC 459g.

Sec. 406. The Act of March 10, 1966 (80 Stat. 33; 16 U.S.C. 459g) providing for the establishment of Cape Lookout National Seashore in the State of North Carolina is amended as follows:

(1) Section 1 is amended by deleting "'Proposed Boundaries—Proposed Cape Lookout National Seashore', dated April 1964, and numbered NS-CL-7101-B," and substituting in lieu thereof "'Boundary Map, Cape Lookout National Seashore', dated March 1974, and numbered 623-20,009," and by changing the colon to a period and deleting the remainder of the section.

Non-Federal land acquisition.
16 USC 459g-1.

(2) Subsection 2(a) is amended by deleting the third sentence and inserting in lieu thereof the following "Lands owned by the State of North Carolina or any political subdivision thereof may be acquired only by donation, but the Secretary may, subject to the provisions of section 7 of this Act, acquire any other non-Federal lands, marshlands, waters, or interests therein which are located within the boundaries of the seashore by donation, purchase with donated or appropriated funds, or exchange. Notwithstanding any other provision of law, the Secretary may accept any lands donated by the State of North Carolina subject to a provision for reversion to the State conditioned upon continued use of the property for national seashore purposes.".

Post, p. 1449.

16 USC 459g-2.

(3) Section 3 is amended by revising the first sentence to read as follows: "When title to lands and interests in lands in an amount sufficient to constitute an efficiently administerable unit for the purposes of this Act is vested in the United States, the Secretary shall declare the establishment of the seashore by publication of notice thereof in the Federal Register.".

Publication in Federal Register.

(4) Section 7 is amended to read as follows: Report to President. 16 USC 459g-6.

"SEC. 7. On or before January 1, 1978, the Secretary shall review the area within the seashore and shall report to the President, in accordance with section 3 (c) and (d) of the Wilderness Act (78 Stat. 891; 16 U.S.C. 1132 (c) and (d)), his recommendations as to the suitability or nonsuitability of any area within the seashore for preservation as wilderness, and any designation of any such areas as a wilderness shall be accomplished in accordance with said subsections of the Wilderness Act."

(5) Add a new section 8 to read as follows: Appropriation. 16 USC 459g-7.

"SEC. 8. There are hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act, not to exceed $7,903,000 for acquisition of lands and interests therein, of which no more than $1,000,000 may be expended for acquisition of lands owned by Core Banks Club Properties, Incorporated. For development of essential public facilities there are authorized to be appropriated not more than $2,935,000. On or before January 1, 1978, the Secretary shall develop and transmit to the Committees on Interior and Insular Affairs of the United States Congress a final master plan for the full development of the seashore consistent with the preservation objectives of this Act, indicating— Master plan, transmittal to congressional committees.

"(1) the facilities needed to accommodate the health, safety and recreation needs of the visiting public;

"(2) the location and estimated cost of all facilities; and

"(3) the projected need for any additional facilities within the seashore."

Approved October 26, 1974.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 93-1286 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 93-1232 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD, Vol. 120 (1974):
Aug. 19, considered and passed House.
Oct. 8, considered and passed Senate, amended.
Oct. 16, House concurred in Senate amendments with an amendment; Senate concurred in House amendment.

CUMBERLAND GAP NATIONAL HISTORICAL PARK

WILDERNESS LEGISLATION

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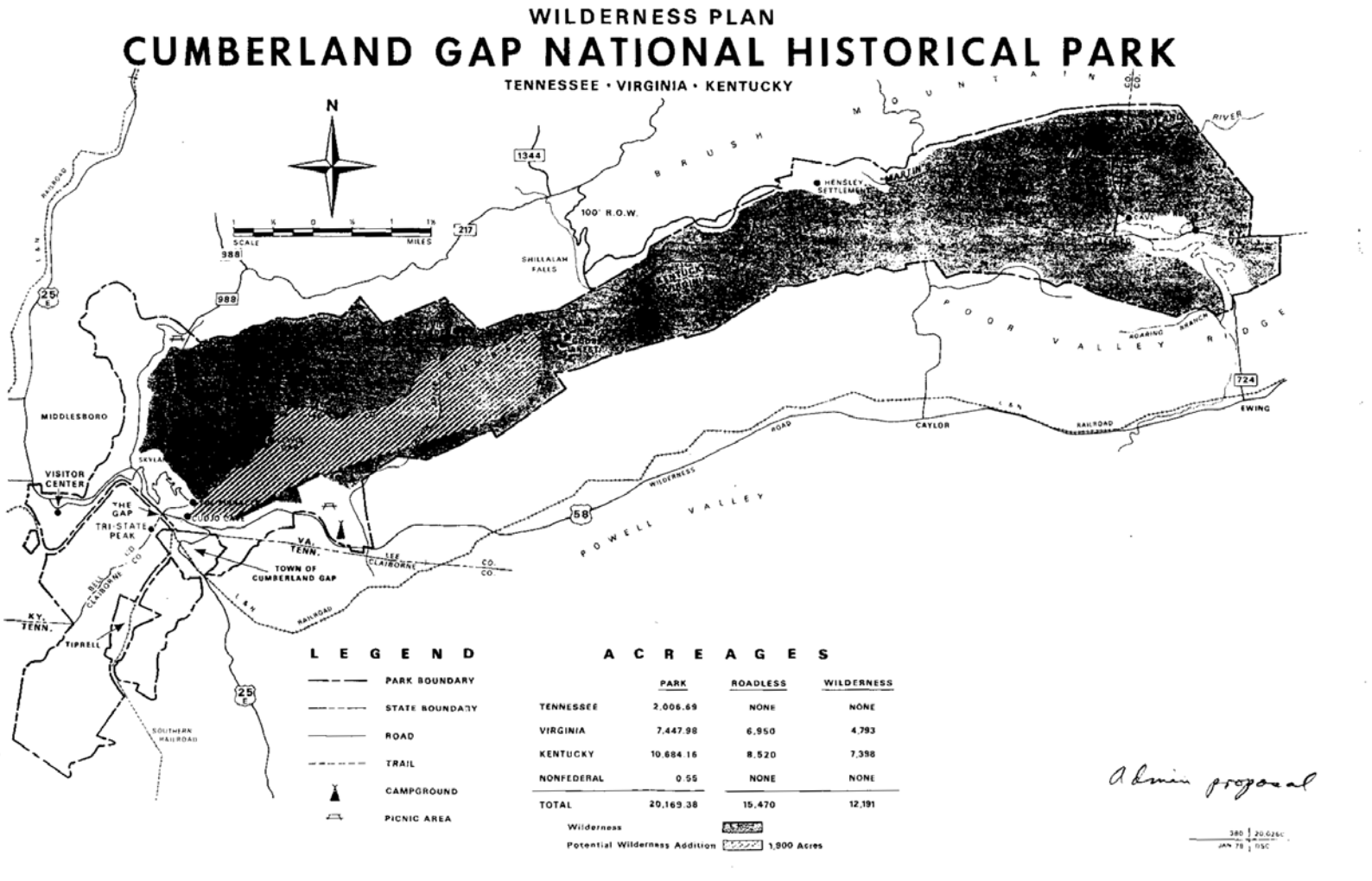
CUMBERLAND GAP NATIONAL HISTORICAL PARK
KENTUCKY, TENNESSEE, AND VIRGINIA

WE HAVE RECENTLY REVIEWED THE WILDERNESS PROPOSAL WHICH THE DEPARTMENT OF THE INTERIOR SENT TO THE CONGRESS ON JANUARY 12, 1976, WHICH PROPOSED 7,940 ACRES AS WILDERNESS AND 5,670 ACRES AS POTENTIAL WILDERNESS ADDITIONS, AND NOW RECOMMEND THAT 12,191 ACRES BE DESIGNATED WILDERNESS AND 1,900 ACRES AS POTENTIAL WILDERNESS ADDITIONS. THE 1,900 ACRES ARE SUBJECT TO RIGHTS HELD BY THE LINCOLN MEMORIAL UNIVERSITY OF HARROGATE, TENNESSEE. THE UNIVERSITY RETAINED RIGHTS TO DEVELOP AND USE THE CAVE PASSAGES UNDER THIS AREA AND TO DEVELOP AND USE THE WATER WHICH FLOWS THROUGH THE CAVE. THE UNIVERSITY OPERATES THE CAVE AS A COMMERCIAL VENTURE AND DRAWS WATER FROM THE UNDERGROUND STREAM. ALTHOUGH THE DEVELOPED PORTION OF THE CAVE IS NOT WITHIN THE WILDERNESS PROPOSAL, THE CAVE AND WATER RIGHTS EXTEND TO BOTH THE UNDERGROUND AND SURFACE PORTIONS OF THE FORMER UNIVERSITY PROPERTY WHICH IS WITHIN THE PROPOSED WILDERNESS. THIS WILDERNESS RECOMMENDATION IS SHOWN ON A MAP ENTITLED, "WILDERNESS PLAN, CUMBERLAND GAP NATIONAL HISTORICAL PARK," NUMBERED 380-20,026-C AND DATED JANUARY 1978.


WILDERNESS PLAN
CUMBERLAND GAP NATIONAL HISTORICAL PARK
TENNESSEE • VIRGINIA • KENTUCKY
N
SCALE
MILES
100' R.O.W.
SHILLALAH FALLS
HENSLEY SETTLEMENT
BRUSH MOUNTAIN
POOR VALLEY RIDGE
POWELL VALLEY
MIDDLESBORO
VISITOR CENTER
THE GAP
TRI-STATE PEAK
CUDJO CAVE
TOWN OF CUMBERLAND GAP
VA. TENN.
KY. TENN.
TIPRELL
CAYLOR
EWING
LEGEND
PARK BOUNDARY
STATE BOUNDARY
ROAD
TRAIL
CAMPGROUND
PICNIC AREA
ACREAGES
PARK
ROADLESS
WILDERNESS
TENNESSEE 2,006.69 NONE NONE
VIRGINIA 7,447.98 6,950 4,793
KENTUCKY 10,684.16 8,520 7,398
NONFEDERAL 0.55 NONE NONE
TOTAL 20,169.38 15,470 12,191
Wilderness
Potential Wilderness Addition 1,900 Acres
Admin proposal

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAY 11 1978

Honorable Thomas P. O'Neill, Jr.
Speaker of the
House of Representatives
Washington, D. C. 20515

Dear Mr. Speaker:

Enclosed is a draft bill "To designate certain lands within units of the National Park System as wilderness."

We recommend that the draft bill be referred to the appropriate Committee for consideration, and that it be enacted.

The purpose of the bill is to designate, in accordance with section 3(c) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132(c)), 25 areas as wilderness or potential wilderness. This proposed omnibus legislation represents completion of this Administration's review of wilderness proposals for areas within the National Park System made by previous Administrations, and consolidates into one legislative package many separate pieces of wilderness legislation currently pending before the Congress.

There are currently 30 National Park System wilderness proposals submitted by this Administration or previous Administrations which are not yet enacted. The bill proposes the following:

1. Four of the proposals should be enacted as previously submitted: Buffalo National River, Cedar Breaks, Everglades, and Glacier;

2. Action should be postponed on five of the proposals pending further study: Yosemite, Canyonlands, Capital Reef, Death Valley, and Assateague;

3. Action should be postponed on Great Smokies until the Park Service and the State of North Carolina resolve a dispute regarding the location of a road;

4. As the Katmai National Monument is being considered as part of the D-2 deliberations, we have not proposed designating it in this legislation;

5. The remainder of the previously submitted proposals should be revised in various ways which are described in the attached descriptions.

In addition, we have proposed wilderness and potential wilderness designation for portions of Gulf Islands National Seashore.

We have attached to this proposal a description of each area and other information, such as the facilities currently existing in those areas and management practices.

The Office of Management and Budget has advised that this legislative proposal is in accord with the program of the President.

Sincerely,

Bob Herbst

Assistant SECRETARY

2

A B I L L

To designate certain lands within units of the National Park System as wilderness.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in accordance with section 3(c) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132(c)), the following lands are hereby designated as wilderness.

(1) Arches National Park, Utah, wilderness comprising 61,547 acres, and potential wilderness additions comprising 8,461 acres, depicted on a map entitled "Wilderness Plan, Arches National Park, Utah", numbered 138-20,014-A and dated January 1978, to be known as the Arches Wilderness

(2) Big Bend National Park, Texas, wilderness comprising 538,250 acres, and potential wilderness additions comprising 44,750 acres, depicted on a map entitled "Wilderness Plan, Big Bend National Park, Texas", numbered 155-20,004-D and dated January 1978, to be known as the Big Bend Wilderness.

(3) Bryce Canyon National Park, Utah, wilderness comprising 20,810 acres depicted on a map entitled "Wilderness Plan, Bryce Canyon National Park, Utah", numbered 129-20,004-C and dated January 1977, to be known as the Bryce Canyon Wilderness.

(4) Buffalo National River, Arkansas, wilderness comprising 10,529 acres, and potential wilderness additions comprising 25,471 acres, depicted on a map entitled "Wilderness Plan, Buffalo National River, Arkansas", numbered 173-20,036-B and dated March 1975, to be known as the Buffalo River Wilderness.

(5) Carlsbad Caverns National Park, New Mexico, wilderness comprising 33,125 acres, and potential wilderness additions comprising 320 acres, depicted on a map entitled "Wilderness Plan, Carlsbad Caverns National Park, New Mexico", numbered 130-20,003-B and dated January 1978, to be known as the Carlsbad Caverns Wilderness.

(6) Cedar Breaks National Monument, Utah, wilderness comprising 4,830 acres, depicted on a map entitled "Wilderness Plan, Cedar Breaks National Monument, Utah", numbered 154-20,000 and dated May 1973, to be known as the Cedar Breaks Wilderness.

(7) Colorado National Monument, Colorado, wilderness comprising 13,842 acres, and potential wilderness additions comprising 937 acres, depicted on a map entitled "Wilderness Plan, Colorado National Monument, Colorado", numbered 119-20,006-C and dated January 1978, to be known as the Colorado Wilderness.

(8) Crater Lake National Park, Oregon, wilderness comprising 127,058 acres, depicted on a map entitled "Wilderness Plan, Crater Lake National Park, Oregon", numbered 106-20,006-E and dated January 1978, to be known as the Crater Lake Wilderness.

(9) Cumberland Gap National Historical Park, Kentucky, Tennessee, Virginia, wilderness comprising 12,191 acres, and potential wilderness additions comprising 1,900 acres, depicted on a map entitled "Wilderness Plan, Cumberland Gap National Historical Park, Tennessee, Virginia, Kentucky", numbered 380-20,026-C and dated January 1978, to be known as the Cumberland Gap Wilderness.

(10) Dinosaur National Monument, Colorado and Utah, wilderness comprising 205,672 acres, and potential wilderness additions comprising 5,055 acres, depicted on a map entitled "Wilderness Plan, Dinosaur National Monument, Utah and Colorado", numbered 122-20,009-B and dated January 1978, to be known as the Dinosaur Wilderness.

(11) Everglades National Park, Florida, wilderness comprising 1,296,500 acres and potential wilderness additions comprising 81,900 acres, depicted on a map entitled "Wilderness Plan, Everglades National Park, Florida", numbered 160-20,011 and dated June 1974, to be known as the Everglades Wilderness.

(12) Glacier National Park, Montana, wilderness comprising 927,550 acres, and potential wilderness additions comprising 3,360 acres, depicte on a map entitled "Wilderness Plan, Glacier National Park, Montana", numbered 117-20,010-A and dated March 1974, to be known as the Glacier Wilderness.

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(13) Grand Teton National Park, Wyoming, wilderness comprising 122,604 acres, and potential wilderness additions comprising 20,850 acres, depicted on a map entitled "Wilderness Plan, Grand Teton National Park, Wyoming", numbered 136-20,013-A and dated January 1978, to be known as the Grand Teton Wilderness.

(14) Guadalupe Mountains National Park, Texas, wilderness comprising 55,746 acres, and potential wilderness additions comprising 703 acres, depicted on a map entitled "Wilderness Plan, Guadalupe Mountains National Park, Texas", numbered 166-20,006-C and dated January 1978, to be known as the Guadalupe Mountains Wilderness.

(15) Gulf Islands National Seashore, Florida and Mississippi, wilderness comprising 1,792 acres, and potential wilderness additions comprising 2,800 acres, depicted on a map entitled "Wilderness Plan, Gulf Islands National Seashore, Mississippi, Florida", numbered 635-20,018-A and dated March 1977, to be known as the Gulf Islands Wilderness.

(16) Hawaii Volcanoes National Park, Hawaii, wilderness comprising 123,100 acres, and potential wilderness additions comprising 7,850 acres, depicted on a map entitled "Wilderness Plan, Hawaii Volcanoes National Park, Hawaii", numbered 124-20,020 and dated April 1974, to be known as the Hawaii Volcanoes Wilderness.

(17) Mount Rainier National Park, Washington, wilderness comprisir 208,000 acres, and potential wilderness additions comprising 165 acres, depicted on a map entitled "Wilderness Plan, Mount Rainier National Park, Washington", numbered 105-20,007-A and dated August 1977, to be known as the Mount Rainier Wilderness.

(18) North Cascades Complex, Washington, wilderness comprising 537,120 acres, and potential wilderness additions comprising 1,508 acres, depicted on a map entitled "Wilderness Plan, North Cascades, Washington", numbered 168-20,009-B and dated January 1978, to be known as the North Cascades Wilderness.

(19) Olympic National Park, Washington, wilderness comprising 861,179 acres, and potential wilderness additions comprising 2,855 acres, depicted on a map entitled "Wilderness Plan, Olympic National Park, Washington", numbered 149-20,009-B and dated January 1978, to be known as the Olympic Wilderness.

(20) Organ Pipe Cactus National Monument, Arizona, wilderness comprising 312,600 acres, and potential wilderness additions comprising 1,240 acres, depicted on a map entitled "Wilderness Plan, Organ Pipe Cactus National Monument, Arizona", numbered 157-20,001-A and dated January 1978, to be known as the Organ Pipe Cactus Wilderness.

(21) Rocky Mountain National Park, Colorado, wilderness comprising 240,030 acres, and potential wilderness additions comprising 284 acres, depicted on a map entitled "Wilderness Plan, Rocky Mountain National Park, Colorado", numbered 121-20,015-A and dated January 1978, to be known as the Rocky Mountain Wilderness.

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(22) Sequoia and Kings Canyon National Parks, California, wilderness comprising 802,880 acres, and potential wilderness additions comprising 6,570 acres, depicted on a map entitled "Wilderness Plan, Sequoia and Kings Canyon National Parks, California", numbered 102-20,003-C and dated January 1978, to be known as the Sequoia and Kings Canyon Wilderness.

(23) Theodore Roosevelt National Memorial Park, North Dakota, wilderness comprising 29,920 acres, depicted on a map entitled "Theodore Roosevelt National Memorial Park, North Dakota", numbered 387-20,007-E (sheets 1 and 2) and dated January 1978, to be known as the Theodore Roosevelt Wilderness.

(24) Yellowstone National Park, Idaho, Montana and Wyoming, wilderness comprising 2,032,721 acres, depicted on a map entitled "Wilderness Plan, Yellowstone National Park, Idaho, Montana, Wyoming", numbered 101-20,005-A and dated January 1978, to be known as the Yellowstone Wilderness.

(25) Zion National Park, Utah, wilderness comprising 120,620 acres, and potential wilderness additions comprising 10,364 acres, depicted on a map entitled "Wilderness Plan, Zion National Park, Utah", numbered 116-20,002-A and dated January 1978, to be known as the Zion Wilderness.

Sec. 2. A map and description of the boundaries of the areas designated in this Act shall be on file and available for public inspection in the office of the Director of the National Park Service, Department of the Interior, and in the office of the Superintendent of each area designated in this Act. As soon as practicable after this Act takes

effect, maps of the wilderness areas and descriptions of their boundaries shall be filed with the Interior and Insular Affairs Committees of the United States Senate and House of Representatives, and such maps and descriptions shall have the same force and effect as if included in this Act: Provided, That correction of clerical and typographical errors in such maps and descriptions may be made.

Sec. 3. All Park Service lands which represent potential wilderness additions are designated wilderness subject only to the cessation of all uses thereon prohibited by the Wilderness Act except that the Secretary of the Interior may: extend grazing permits at Dinosaur National Monument, and Grand Teton National Park; extend a missile site permit at Everglades National Park; and he may permit a realignment of roads at Guadalupe Mountains National Park and Sequoia and Kings Canyon National Parks. At such time as all uses thereon prohibited by the Wilderness Act have ceased, the Secretary of the Interior is directed to publish notice thereof in the Federal Register, and effective upon such publication the lands represented as potential wilderness additions shall be administered as wilderness.

Sec. 4. Nothing in this Act shall be construed to diminish the authority of the Coast Guard, pursuant to 14 U.S.C. 2 and 81 and title 1 of the Ports and Waterways Safety Act of 1972 (33 U.S.C. 1221), or the Federal Aviation Administration to use the areas designated wilderness by this Act within the Everglades National Park, Florida; Olympic National Park, Washington; and the Gulf Islands National Seashore, Florida and Mississippi, for navigational and maritime safety purposes.

7

Sec. 5. Nothing in this Act shall be construed as altering in any way any rights or claims which the Blackfeet Tribe of Indians may have within or in the vicinity of Glacier National Park; and the third sentence of Section 1 of the Act of May 11, 1910 (36 Stat. 354; 16 U.S.C. 161), as amended, is repealed.

Sec. 6. Nothing in this Act shall be construed as altering in any way the authority granted to the International Boundary Commission under the treaties between the United States and Great Britain of April 11, 1908 (35 Stat. 2003; 12 Bevans 297) and February 24, 1925 (44 Stat. 2102; 6 Bevans 7) as related to lands within the North Cascades Wilderness and the Glacier Wilderness as designated by section 1 of this Act

Sec. 7. Section 1 of the Act of January 26, 1915 (38 Stat. 798, 800; 16 U.S.C. 191), pertaining to the use for reclamation purposes of lands within Rocky Mountain National Park, is amended by deleting therefro the proviso.

Sec. 8 The areas designated by this Act as wilderness shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act governing areas designated by that Act as wilderness, except that any reference in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act, and, where appropriate, any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

8

FERN LAKE CONSERVATION AND RECREATION ACT

U.S. CODE TITLE 16, CHAPTER 1, SUBCHAPTER XXVIII, § 268A ACQUISITION OF FERN LAKE WATERSHED

(SOURCE: OFFICE OF THE LAW REVISION COUNSEL OF THE U.S. HOUSE OF REPRESENTATIVES 2008)

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TITLE 16 > CHAPTER 1 > SUBCHAPTER XXVIII > § 268a

§ 268a. Acquisition of Fern Lake watershed

(a) Short title

This section may be cited as the "Fern Lake Conservation and Recreation Act".

(b) Findings and purposes

(1) Findings

The Congress finds the following:

(A) Fern Lake and its surrounding watershed in Bell County, Kentucky, and Claiborne County, Tennessee, is [1] within the potential boundaries of Cumberland Gap National Historical Park as originally authorized by the Act of June 11, 1940 (54 Stat. 262; 16 U.S.C. 261 et seq.).

(B) The acquisition of Fern Lake and its surrounding watershed and its inclusion in Cumberland Gap National Historical Park would protect the vista from Pinnacle Overlook, which is one of the park's most valuable scenic resources and most popular attractions, and enhance recreational opportunities at the park.

(C) Fern Lake is the water supply source for the city of Middlesboro, Kentucky, and environs.

(D) The 4,500-acre Fern Lake watershed is privately owned, and the 150-acre lake and part of the watershed are currently for sale, but the Secretary of the Interior is precluded by the first section of the Act of June 11, 1940 (16 U.S.C. 261), from using appropriated funds to acquire the lands.

(2) Purposes

The purposes of the section are—

(A) to authorize the Secretary of the Interior to use appropriated funds if necessary, in addition to other acquisition methods, to acquire from willing sellers Fern Lake and its surrounding watershed, in order to protect scenic and natural resources and enhance recreational opportunities at Cumberland Gap National Historical Park; and

(B) to allow the continued supply of water from Fern Lake to the city of Middlesboro, Kentucky, and environs.

(c) Land acquisition and conveyance authority, Fern Lake, Cumberland Gap National Historical Park

(1) Definitions

In this section:

(A) Fern Lake

The term "Fern Lake" means Fern Lake located in Bell County, Kentucky, and Claiborne County, Tennessee.

(B) Land

The term "land" means land, water, interests in land, and any improvements on the land.

(C) Park

The term "park" means Cumberland Gap National Historical Park, as authorized and established by the Act of June 11, 1940 (54 Stat. 262; 16 U.S.C. 261 et seq.).

(D) Secretary

The term "Secretary" means the Secretary of the Interior, acting through the Director of the National Park Service.

(2) Acquisition authorized

The Secretary may acquire for addition to the park lands consisting of approximately 4,500 acres and containing Fern Lake and its surrounding watershed, as generally depicted on the map entitled "Cumberland Gap National Historical Park, Fern Lake Watershed", numbered 380/80,004, and dated May 2001. The map shall be on file in the appropriate offices of the National Park Service.

(3) Boundary adjustment and administration

Subject to paragraph (4), the Secretary shall revise the boundaries of the park to include the land acquired under paragraph (2). The Secretary shall administer the acquired lands as part of the park in accordance with the laws and regulations applicable to the park.

(4) Conveyance of Fern Lake

(A) Conveyance required

If the Secretary acquires Fern Lake, the Secretary shall convey, notwithstanding any other law and without consideration, to the city of Middlesboro, Kentucky, all right, title, and interest of the United States in and to Fern Lake, up to the normal operating elevation of 1,200.4 feet above sea level, along with the dam and all appurtenances associated with the withdrawal and delivery of water from Fern Lake.

(B) Terms of conveyance

In executing the conveyance under subparagraph (4)(A), the Secretary may retain an easement for scenic and recreational purposes.

(C) Reversionary interest

In the event Fern Lake is no longer used as a source of municipal water supply for the city of Middlesboro, Kentucky, and its environs, ownership of Fern Lake shall revert to the United States and it shall be managed by the Secretary as part of the park.

(5) Consultation requirements

In order to better manage lands acquired under this section in a manner that will

facilitate the provision of water for municipal needs, as well as the establishment and promotion of new recreational opportunities at the park, the Secretary shall consult with—

(A) appropriate officials in the States of Kentucky, Tennessee, and Virginia, and political subdivisions of these States;

(B) organizations involved in promoting tourism in these States; and

(C) other interested parties.

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[1] So in original. Probably should be "are".

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MEMORANDUM OF UNDERSTANDING AMONG THE UNITED STATES DEPARTMENT OF THE INTERIOR AND THE STATE OF TENNESSEE AND THE COMMONWEALTH OF KENTUCKY

MEMORANDUM OF UNDERSTANDING
AMONG
THE UNITED STATES DEPARTMENT OF THE INTERIOR
AND
THE STATE OF TENNESSEE
AND
THE COMMONWEALTH OF KENTUCKY

THIS AGREEMENT, made this 21st day of February 1986, by and among the United States Department of the Interior, acting by and through the National Park Service (hereinafter referred to as NPS); the State of Tennessee, acting by and through its Department of Transportation (hereinafter referred to as TENNESSEE); and the Commonwealth of Kentucky, acting by and through its Department of Highways (hereinafter referred to as KENTUCKY).

W I T N E S S E T H:

WHEREAS, the Cumberland Gap National Historical Park (hereinafter referred to as Park) was established in accordance with the provisions of the Act of June 11, 1940, 54 Stat. 262, 16 U.S.C. 261, et seq; and

WHEREAS, a portion of the Park is traversed by a segment of U. S. Route 25E, a designated highway within the Federal-aid primary systems of TENNESSEE and KENTUCKY; and

WHEREAS, Section 160(a) of the Federal-Aid Highway Act of 1973, the Act of August 13, 1973, Public Law 93-87, provided that funds shall be available for reconstruction and relocation of U. S. Route 25E through the Park, including construction of a tunnel and

approaches thereto, so as to permit restoration of the Gap and provide adequate traffic capacity; and

WHEREAS, Section 160(b) of the Federal-Aid Highway Act of 1973, provided that upon construction, such highway and tunnel and all associated lands and rights-of-way shall be transferred to the National Park Service and managed as a part of the Park; and

WHEREAS, the Act of December 19, 1985, Public Law 99-190, further provided that funds for construction of the Cumberland Gap Tunnel shall only be available when the States of Kentucky and Tennessee have entered into an agreement with the National Park Service to operate and maintain all portions of U. S. Route 25E, including the tunnel, as well as that section of U. S. Route 25E which is scheduled to be reconstructed and designated U. S. Route 58 in Claiborne County, Tennessee, within the boundaries of the Park; and

WHEREAS, TENNESSEE, acting in accordance with the provisions of Tennessee Code Annotated §4-3-2303, and other pertinent provisions of State law; and KENTUCKY, acting in accordance with the provisions of Kentucky Revised Statutes §176.240, and other pertinent provisions of Commonwealth law, are authorized to enter into agreements with the NPS for the purposes contemplated herein.

NOW THEREFORE, in accordance with the provisions of the Act of August 15, 1985, Public Law 99-88, and in consideration of the mutual agreements herein set forth, and other good and valuable considerations, the receipt of which is hereby acknowledged, the NPS, TENNESSEE and KENTUCKY covenant and agree as follows:

1. The parties hereto acknowledge that U. S. Route 25E, a portion of which is situated within Claiborne County, Tennessee and Bell County, Kentucky, is a highway within the Federal-aid primary system, as defined in 23 U.S.C. §103.

2. The parties hereto recognize that, in accordance with the provisions of Public Law 93-87, and subject to the availability of appropriated funds from the Highway Trust Fund, the Federal Highway Administration (hereinafter referred to as FHWA) is charged with the responsibility of reconstruction and relocation of U. S. Route 25E through the Park, including construction of a tunnel and approaches thereto, as well as that section of U. S. Route 25E which is scheduled to be reconstructed and designated U. S. Route 58 in Claiborne County, Tennessee.

3. The parties hereto understand and agree that the NPS shall provide TENNESSEE and KENTUCKY with written notification of the date on which construction of the PROJECT will be completed. Upon the date of completion of the PROJECT, TENNESSEE and KENTUCKY agree to operate and maintain, or cause to be operated and maintained, all PROJECT facilities contemplated herein. The cost and expense of such operation and maintenance shall be borne by TENNESSEE and KENTUCKY in the following manner:

Tunnel facilities. All costs and expenses related to the operation and maintenance of the tunnel facilities contemplated herein shall be proportioned equally between TENNESSEE and KENTUCKY.

All other PROJECT facilities. TENNESSEE shall be responsible for all costs and expenses related to all other PROJECT facilities which are situated within TENNESSEE. KENTUCKY shall be responsible for all costs and expenses related to all other PROJECT facilities which are situated within KENTUCKY.

Operation and maintenance of the tunnel facilities and all other PROJECT facilities shall include, but not be limited to:

(a) Tunnel. Preservation of the structural and operational characteristics for which originally designed. These include: safe, smooth, skid-resistant roadway surfaces; and proper roadway surface drainage. Replacement or repair, without unreasonable delay, of: ventilation systems; traffic control and monitoring systems; lighting systems, including bulb replacement; water diversion and control systems; firefighting equipment and systems; emergency warning and control systems; and repair of structural railings and approach guardrails. Removal of all rock and other materials blocking or interfering with tunnel access. The tunnel shall be clean, well lighted and adequately ventilated, as designed.

(b) Operation of tunnel. Operation of the tunnel and all its facilities, including but not limited to: providing and compensating qualified personnel for all tunnel operations.

(c) Utilities. Maintenance of all utility delivery systems, including repair and replacement. Payment of all electrical and other utility costs and charges related to the PROJECT.

(d) Roadway surfaces. Preservation of the structural integrity of all roadways and the safety and comfort of the user. This includes a safe, smooth, skid-resistant surface, as close as practical to the original, or subsequently improved, grade and cross section.

(e) Shoulders. Preservation of a safe, smooth surface which is free of obstruction, contiguous with the adjacent roadway surface, and as close as practical to the original, or subsequently improved, grade and cross section.

(f) Roadside and median. Preservation of the roadside and median in a safe and esthetic manner through vegetation management, erosion control and litter pick-up.

(g) Drainage. Preservation of hydraulic capacity for which the PROJECT was originally designed.

(h) Bridges. Preservation of the structural and operational characteristics for which originally designed. These include safe, smooth, skid-resistant roadway surfaces; proper roadway surface drainage; and adequate functioning bearing devices and substructural elements. Replacement or repair of structural railing and approach guardrail should be done without unreasonable delay.

(i) Snow and ice control. Preservation of the roadway safety, efficiency, and environment during winter driving conditions.

(j) Traffic control devices. Preservation of clean, legible, visible, and properly functioning traffic control devices. This includes pavement markings, signing, delineators, signals, etc.

(k) Safety appurtenances. Replacement of damaged, defective, and/or inoperable devices without unreasonable delay. This includes guardrails, impact attenuators, breakaway supports, barriers, etc.

(1) Traffic safety in maintenance and utility work zones. Develop and utilize procedures, consistent with FHWA requirements, that shall aid the safety of motorists and maintenance workers.

4. TENNESSEE and KENTUCKY agree to coordinate all maintenance operations and activities undertaken in accordance with their respective responsibilites under this Agreement. Further, TENNESSEE and KENTUCKY agree that they may enter into arrangements and contracts with each other, as well as qualified third parties, for the performance of their respective responsibilities under this Agreement.

5. Prior to completion of the PROJECT, TENNESSEE and KENTUCKY agree to jointly prepare an operations and maintenance plan for all PROJECT facilities, which are the subject of this Agreement.

6. The parties hereto understand and agree that emergency equipment including but not limited to fire trucks, ambulances, wreckers and other pertinent emergency equipment shall be provided as a cost of the tunnel construction.

7. Notwithstanding the provisions of paragraph 3 herein above, the parties hereto understand and agree that when any PROJECT facility is fully constructed and capable of safe utilization by the public prior to the date of completion of the entire PROJECT, the NPS shall provide written notification to TENNESSEE and KENTUCKY that the facility has been fully constructed and is safe for public use. Upon the date of said notification, TENNESSEE and KENTUCKY agree to operate and maintain, at their own cost and expense, such facility, in accordance with the provisions of paragraphs 3(a) through (1) hereinabove.

8. All operations and maintenance activities contemplated in this Agreement shall be undertaken by TENNESSEE and KENTUCKY, without unreasonable delay and with due regard to safety, in accordance with the specifications prescribed in applicable FHWA operations and maintenance guidelines.

9. The parties hereto understand and agree that, although FHWA is not a signatory party to this Agreement, inasmuch as the PROJECT involves the relocation and reconstruction of a segment of a highway which is within the Federal-aid system, all provisions of 23 U.S.C. §116, relative to maintenance of highways in the Federal-aid system, are incorporated herein by reference and made applicable to the PROJECT and all maintenance activities contemplated by this Agreement.

10. The parties hereto understand and agree that, in the event that TENNESSEE and/or KENTUCKY fail to maintain and operate the PROJECT in accordance with the provisions of this Agreement, the FHWA shall be notified and directed to follow the procedures and, if necessary, impose the sanctions prescribed in 23 U.S.C. §116(c).

11. The parties hereto understand and agree that, in the event TENNESSEE and/or KENTUCKY shall file a request with the FHWA for reclassification, redesignation or withdrawal of U. S. Route 25E and/or U. S. Route 58 from the Federal-aid system, in accordance with 23 U.S.C. §§101, et seq., the party filing such request shall simultaneously provide copies of the request to the other parties hereto, by certified mail, at the following addresses:

NPS
Superintendent
Cumberland Gap National Historical Park
Post Office Box 1848
Middlesboro, Kentucky 40965

TENNESSEE:
Commissioner
Tennessee Department of Transportation
Nashville, Tennessee 37219

KENTUCKY:
Commissioner
Kentucky Department of Highways
Frankfort, Kentucky 40622

12. The parties hereto understand and agree that any request filed with the FHWA for withdrawal of U. S. Route 25E and/or U. S. Route 58 from the Federal-aid system shall provide that, in the event that the request otherwise meets the requirements of FHWA for withdrawal, approval of such request shall be contingent upon the parties hereto entering into an agreement that shall assure the continued operation and maintenance of the PROJECT by TENNESSEE and KENTUCKY.

13. To the extent allowable by State and Commonwealth laws, TENNESSEE and KENTUCKY agree to indemnify and hold harmless the NPS against any and all claims for property damage, personal injury or death arising as a consequence of the operations and maintenance activities contemplated in this Agreement; provided, however, that the NPS may be liable for property damage, personal injury or death caused by the wrongful or negligent act or omission of an employee of the NPS acting within the scope of his employment in accordance with the provisions of the Federal Tort Claims Act, 28 U.S.C. §§1346(b), 2671-80.

14. During the performance of this Agreement, the parties hereto agree to abide by the terms of Executive Order 11246 on non-discrimination and will not discriminate against any person because of race, color, religion, sex or national origin. The parties hereto will take affirmative action to ensure that applicants are employed without regard to their race, color, religion, sex or national origin.

15. The waiver of any breach of any provision of this Agreement, whether such waiver be expressed or implied, shall not be construed to be a continuing waiver or a waiver of, or consent, to any subsequent or prior breach of the same or any other provision of this Agreement.

16. No Member or Delegate to Congress, or Resident Commissioner, shall be admitted to any share of this Agreement, or any benefit that may arise therefrom, but this restriction shall not be construed to extend to this Agreement if made within a corporation or company for its general benefit.

17. This Agreement constitutes the full, complete and entire agreement between and among the parties hereto. No modification or amendment of the Agreement shall be binding on any party hereto unless such modification or amendment shall be made in writing, executed in triplicate by all the parties hereto and incorporated in and by reference made a part of this Agreement.

18. Nothing herein shall preclude TENNESSEE and KENTUCKY from entering into an agreement delineating their respective responsibilities and obligations relative to the operations and maintenance activities contemplated in this Agreement.

19. The duties, responsibilities and obligations of TENNESSEE and KENTUCKY, under the provisions of this Agreement, shall commence upon the dates contemplated in paragraphs 3 and 7 hereof and shall remain in full force and effect so long as U. S. Route 25E and/or U. S. Route 58, situated in Tennessee and Kentucky, remain within the Federal-aid system.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives on the day and year hereinabove first written.

U. S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

By: [signature] 2/5/80

Title: Regional Director

Approved as to form and legal sufficiency

[signature] 2/5/8

Office of the Solicitor
U. S. Department of the Interior

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

By: [signature]

Title: COMMISSIONER

By: [signature]

Title: State Transportation Engr.

Approved as to form and legal sufficiency

[signature]

Department Attorney
Tennessee Department of Transportation

COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET

By: [signature]

Title: Secretary, Ky. Transportation Cabinet

Approved as to form and legal sufficiency

[signature]

Office of General Counsel
Kentucky Transportation Cabinet

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GENERAL AGREEMENT BETWEEN CUMBERLAND GAP NATIONAL HISTORICAL PARK AND THE KENTUCKY TRANSPORTATION CABINET

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Agreement No. 1443GA5230640004

RECEIVED
DEC 5 2003
TRANSPORTATION CABINET
STATE HIGHWAY ENGINEER'S OFFICE

GENERAL AGREEMENT
BETWEEN
CUMBERLAND GAP NATIONAL HISTORICAL PARK
AND THE
KENTUCKY TRANSPORTATION CABINET

ARTICLE I – BACKGROUND, OBJECTIVES, AND AUTHORITIES

WHEREAS, the objectives of this agreement are to:

- Provide for the continuation of emergency medical services by the Cumberland Gap Tunnel Authority (hereinafter CGTA), a Kentucky licensed basic life support ambulance service owned by the Kentucky Transportation Cabinet (hereinafter KTC), to the Cumberland Gap Tunnel, situated within, and owned by, the Cumberland Gap National Historical Park (CGNHP; hereinafter also referred to as the "Park")
- Allow a change in administrative procedure that allows termination of the Tennessee ambulance service license requirement.
- Provide federal jurisdiction for emergency medical response at the Cumberland Gap Tunnel and its approaches within the confines of the National Historical Park to the KTC-owned and State licensed ambulance service.

WHEREAS, this General Agreement is entered into pursuant to the National Park Service Organic Act of August 25, 1916, 39 Statute 535, as amended, under legislative authority of Title 16 United States Code (U.S.C.) §1f, and Subchapter 1, Section 1a-2(g), and NPS Authorities for Cooperative Agreements; and

WHEREAS, The Agreement of February 21, 1986 between the Department of the Interior, acting by and through the National Park Service (NPS), the Tennessee Department of Transportation (TDOT) and the Kentucky Transportation Cabinet authorized the TDOT and KTC to enter into an agreement to operate and maintain all portions of U.S. Route 25E, including the Cumberland Gap Tunnel, as well as that section of U.S. Route 58 in Claiborne County, Tennessee, within the boundaries of the Park; and

WHEREAS, an Interstate Agreement of January 20, 1995 between the KTC and TDOT named the KTC to be the lead state to administer tunnel operations and authorized the establishment of an Advisory Committee to oversee tunnel operations and maintenance of facilities specific to tunnel operations; and

WHEREAS, NPS Directive 51, under authority of the NPS Organic Act (16 USC 1-4), and delegations of authority contained in Part 245 of the Department of Interior Manual, allow the NPS to adopt all or part of the policies and guidelines established by the State EMS Bureau in which the Park is located without the State imposing its regulatory power upon the NPS in absence of specific congressional consent; and

WHEREAS, the CGTA Kentucky ambulance service license is owned by the KTC as a means of fulfilling the Agreements of February 21, 1986 and the Interstate Agreement of January 20, 1995 between TDOT and KTC, said ambulance service was established and has been in continuous operation since October 1996 for the sole and express purpose of providing emergency medical service at the Cumberland Gap Tunnel and its approaches; and

WHEREAS, the Tennessee EMS Board has adopted significant changes to their regulations regarding personnel licensure and license reciprocity that fall outside of a national standard and are above and beyond the requirements of the original scope of services and requirements for operations and maintenance of the Cumberland Gap Tunnel to be provided by the KTC and TDOT,

NOW THEREFORE, in consideration of mutual agreement herein set forth, and under due consideration, the parties hereto covenant and agree as follows:

ARTICLE II – STATEMENT OF WORK

1. The Park agrees to establish and extend jurisdiction of the service area that the CGTA ambulance service, owned by the KTC and to be solely licensed in Kentucky, may respond to provide emergency medical services to the Cumberland Gap Tunnel and its approaches. This extension of jurisdiction shall allow the Kentucky-licensed ambulance service to respond within a federally owned service area that includes areas within the states of Kentucky, Virginia, and Tennessee.

2. The KTC agrees to maintain licensing of a basic life support ambulance service according to the requirements of the Commonwealth of Kentucky Board of Emergency Medical Services, to fulfill the obligations to the Cumberland Gap Tunnel as designated in the aforementioned Agreements of 1986 and 1995.

3. The KTC agrees to ensure that emergency response personnel are trained and certified to, at minimum, the Emergency Medical Technician – Basic (EMT-B) level. Training will be conducted using national standard curricula and EMT-B personnel will be tested, certified, and their certification maintained, as required by the Commonwealth of Kentucky.

ARTICLE III – TERM OF AGREEMENT

The duties, responsibilities, and obligations of the parties shall commence immediately upon signature approval of this GA and shall remain in full force and effect under the same terms and conditions contemplated in Section 12 and Section 19, in the above referenced Agreement dated February 21, 1986.

ARTICLE IV – KEY OFFICIALS (NPS & OTHER PARTY)

Cumberland Gap National Historical Park	Kentucky Transportation Cabinet
Official Administrators:	
Mark Woods Superintendent Cumberland Gap National Historical Park Middlesboro, Kentucky 40965 (606) 248-2817	J. M. Yowell Chief Highway Engineer Kentucky Transportation Cabinet State Office Bldg. Frankfort, Kentucky 40622 (502) 564-2277

ARTICLE V – PROPERTY UTILIZATION

The Park will provide use of facilities at the Cumberland Gap Tunnel to support the operations and maintenance of that property and its approaches as per the Agreements of February 21, 1986, and January 20, 1995.

ARTICLE VI – PRIOR APPROVAL, IF APPLICABLE

NOT APPLICABLE

ARTICLE VII – REPORTS AND/OR DELIVERABLES, IF APPLICABLE

NOT APPLICABLE

ARTICLE VIII – TERMINATION

See Article III – Term of Agreement

ARTICLE IX – STANDARD CLAUSES

1. **Civil Rights** - During the performance of this Agreement, the participants agree to abide by the terms of USDI-Civil Rights Assurance Certification of Non-discrimination, and will not discriminate against any person because of race, color, religion, sex, or national origin. The participants will take affirmative action to ensure that applicants are employed without regard to their race, color, religion, sex, or national origin.

2. **Officials Not to Benefit** – No member or delegate to Congress, or resident Commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

3. **Promotions** – Kentucky Transportation Cabinet shall not publicize, or otherwise circulate, promotional material (such as advertisements, sales brochures, press releases, speeches, still and motion pictures, articles, manuscripts, or other publications) that states or implies Governmental, Departmental, Bureau, or government employee endorsement of a product, service, or position that the Kentucky Transportation Cabinet represents. No release of information relating to this agreement may imply that the Government approves of the Kentucky Transportation Cabinet's work product, or considers the Kentucky Transportation Cabinet's work product to be superior to other products or services.

4. **Public Information Release** – The Kentucky Transportation Cabinet must obtain prior Government approval from the Park for any public information releases which refer to the Department of Interior, any bureau, park unit, or employee (by name or title), or this agreement. The specific text, layout, photographs, etc., of the proposed release must be submitted with the request for approval.

ARTICLE X – AUTHORIZING SIGNATURES

Agreed upon and approved by:

Mark Woods
Superintendent, Cumberland Gap National Historical Park

12-1-03
Date

J. M. Yowell
State Highway Engineer, Kentucky Transportation Cabinet

12/5/03
Date

SURFACE MINING CONTROL AND RECLAMATION ACT OF 1977
30 U.S.C. §§ 1234-1328;
30 CFR PART 700 ET SEQ
(SECTION 522 ONLY)

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Section 522 of the Public Law 95-87, the Surface Mining Control and Reclamation Act of 1977 (SMCRA), passed August 3, 1977 (revised through December 31, 1993).

Source: http://www.osmre.gov/topic/SMCRA/SMCRA.shtm

522. DESIGNATING AREAS UNSUITABLE FOR SURFACE COAL MINING
[30 U.S.C. 1272]

SEC. 522. (a)(1) To be eligible to assume primary regulatory authority pursuant to section 503, each State shall establish a planning process enabling objective decisions based upon competent and scientifically sound data and information as to which, if any, land areas of a State are unsuitable for all or certain types of surface coal mining operations pursuant to the standards set forth in paragraphs (2) and (3) of this subsection but such designation shall not prevent the mineral exploration pursuant to the Act of any area so designated.
(2) Upon petition pursuant to subsection (c) of this section, the State regulatory authority shall designate an area as unsuitable for all or certain types of surface coal mining operations if the State regulatory authority determines that reclamation pursuant to the requirements of this Act is not technologically and economically feasible.
(3) Upon petition pursuant to subsection (c) of this section, a surface area may be designated unsuitable for certain types of surface coal mining operations if such operations will -
(A) be incompatible with existing State or local land use plans or programs; or
(B) affect fragile or historic lands in which such operations could result in significant damage to important historic, cultural, scientific, and esthetic values and natural systems; or
(C) affect renewable resource lands in which such operations could result in a substantial loss or reduction of long-range productivity of water supply or of food or fiber products, and such lands to include aquifers and aquifer recharge areas; or
(D) affect natural hazard lands in which such operations could substantially endanger life and property, such lands to include areas subject to frequent flooding and areas of unstable geology.
(4) To comply with this section, a State must demonstrate it has developed or is developing a process which includes -
(A) a State agency responsible for surface coal mining lands review;
(B) a data base and an inventory system which will permit proper evaluation of the capacity of different land areas of the State to support and permit reclamation of surface coal mining operations;
(C) a method or methods for implementing land use planning decisions concerning surface coal mining operations; and
(D) proper notice, opportunities for public participation, including a public hearing prior to making any designation or redesignation, pursuant to this section.
(5) Determinations of the unsuitability of land for surface coal mining, as provided for in this section, shall be integrated as closely as possible with present and future land use planning and regulation processes at the Federal, State, and local levels.
(6) The requirements of this section shall not apply to lands on which surface coal mining operations are being conducted on the date of enactment of this Act or under a permit issued pursuant to this Act, or where substantial legal and financial commitments in such operation were in existence prior to January 4, 1977.
(b) The Secretary shall conduct a review of the Federal lands to determine, pursuant to the standards set forth in paragraphs (2) and (3) of subsection (a) of this section, whether there are areas on Federal lands which are unsuitable for all or certain types of surface coal mining

operations: Provided, however, That the Secretary may permit surface coal mining on Federal lands prior to the completion of this review. When the Secretary determines an area on Federal lands to be unsuitable for all or certain types of surface coal mining operations, he shall withdraw such area or condition any mineral leasing or mineral entries in a manner so as to limit surface coal mining operations on such area. Where a Federal program has been implemented in a State pursuant to section 504, the Secretary shall implement a process for designation of areas unsuitable for surface coal mining for non-Federal lands within such State and such process shall incorporate the standards and procedures of this section. Prior to designating Federal lands unsuitable for such mining, the Secretary shall consult with the appropriate State and local agencies.

(c) Any person having an interest which is or may be adversely affected shall have the right to petition the regulatory authority to have an area designated as unsuitable for surface coal mining operations, or to have such a designation terminated. Such a petition shall contain allegations of facts with supporting evidence which would tend to establish the allegations. Within ten months after receipt of the petition the regulatory authority shall hold a public hearing in the locality of the affected area, after appropriate notice and publication of the date, time, and location of such hearing. After a person having an interest which is or may be adversely affected has filed a petition and before the hearing, as required by this subsection, any person may intervene by filing allegations of facts with supporting evidence which would tend to establish the allegations. Within sixty days after such hearing, the regulatory authority shall issue and furnish to the petitioner and any other party to the hearing, a written decision regarding the petition, and the reasons therefore. In the event that all the petitioners stipulate agreement prior to the requested hearing, and withdraw their request, such hearing need not be held.

(d) Prior to designating any land areas as unsuitable for surface coal mining operations, the regulatory authority shall prepare a detailed statement on (i) the potential coal resources of the area, (ii) the demand for coal resources, and (iii) the impact of such designation on the environment, the economy, and the supply of coal.

(e) After the enactment of this Act and subject to valid existing rights no surface coal mining operations except those which exist on the date of enactment of this Act shall be permitted -

(1) on any lands within the boundaries of units of the National Park System, the National Wildlife Refuge Systems, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, including study rivers designated under section 5(a) of the Wild and Scenic Rivers Act and National Recreation Areas designated by Act of Congress;

(2) on any Federal lands within the boundaries of any national forest: Provided, however, That surface coal mining operations may be permitted on such lands if the Secretary finds that there are no significant recreational, timber, economic, or other values which may be incompatible with such surface mining operations and -

(A) surface operations and impacts are incident to an underground coal mine; or

(B) where the Secretary of Agriculture determines, with respect to lands which do not have significant forest cover within those national forests west of the 100th meridian, that surface mining is in compliance with the Multiple-Use Sustained-Yield Act of 1960, the Federal Coal Leasing Amendments Act of 1975, the National Forest Management Act of 1976, and the provisions of this Act: And provided further, That no surface coal mining operations may be permitted within the boundaries of the Custer National Forest;

(3) which will adversely affect any publicly owned park or places included in the National Register of Historic Sites unless approved jointly by the regulatory authority and the Federal,

State, or local agency with jurisdiction over the park or the historic site;
(4) within one hundred feet of the outside right-of-way line of any public road, except where mine access roads or haulage roads join such right-of-way line and except that the regulatory authority may permit such roads to be relocated or the area affected to lie within one hundred feet of such road, if after public notice and opportunity for public hearing in the locality a written finding is made that the interests of the public and the landowners affected thereby will be protected; or
(5) within three hundred feet from any occupied dwelling, unless waived by the owner thereof, nor within three hundred feet of any public building, school, church, community, or institutional building, public park, or within one hundred feet of a cemetery.

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APPENDIX B
SERVICE-WIDE MANDATES AND POLICIES PERTAINING TO CUMBERLAND GAP NATIONAL HISTORICAL PARK

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SERVICE-WIDE MANDATES AND POLICIES PERTAINING TO CUMBERLAND GAP NATIONAL HISTORICAL PARK

Laws and executive orders that apply to the management of the Cumberland Gap National Historical Park are provided below.

NATIONAL PARK SERVICE ENABLING LEGISLATION

Act of August 25, 1916 (National Park Service Organic Act); Public Law 64-235; 16 United States Code Section 1 et seq. as amended

Reorganization Act of March 3, 1933; 47 Stat. 1517

General Authorities Act, October 7, 1976; Public Law 94-458; 90 Stat. 1939; 16 United States Code 1a-1 et seq.

Act amending the Act of October 2, 1968 (commonly called Redwoods Act), March 27, 1978; Public Law 95-250; 92 Stat. 163; 16 United States Code Subsection(s) 1a-1, 79a-q

National Parks and Recreation Act, November 10, 1978; Public Law 95-625; 92 Stat. 3467; 16 United States Code 1 et seq.

OTHER LAWS AFFECTING NPS OPERATIONS

Accessibility

Americans with Disabilities Act; Public Law 101-336; 104 Stat. 327; 42 United States Code 12101

Architectural Barriers Act of 1968; Public Law 90-480; 82 Stat. 718; 42 United States Code 4151 et seq.

Rehabilitation Act of 1973; Public Law 93-112; 87 Stat. 357; 29 United States Code 701 et seq. as amended by the Rehabilitation Act Amendments of 1974; 88 Stat. 1617

Cultural Resources

American Indian Religious Freedom Act; Public Law 95-341; 92 Stat. 469; 42 United States Code 1996

Antiquities Act of 1906; Public Law 59-209; 34 Stat. 225; 16 United States Code 432; 43 Code of Federal Regulations 3

Archeological and Historic Preservation Act of 1974; Public Law 93-291; 88 Stat. 174; 16 United States Code 469

Archeological Resources Protection Act of 1979; Public Law 96-95; 93 Stat. 712; 16 United States Code 470aa et seq.; 43 Code of Federal Regulations 7, subparts A and B; 36 Code of Federal Regulations 79

Indian Sacred Sites. Executive Order 13007. 3 Code of Federal Regulations 196 (1997).

National Historic Preservation Act as amended; Public Law 89-665; 80 Stat. 915; 16 United States Code 470 et seq.; 36 Code of Federal Regulations 18, 60, 61, 63, 65, 79, 800

Protection of Historic and Cultural Properties, Executive Order 11593; 36 Code of Federal Regulations 60, 61, 63, 800; 44 Federal Register 6068

Public Buildings Cooperative Use Act of 1976; Public Law 94-541; 90 Stat. 2505; 42 United States Code 4151-4156

Surface Mining Control and Reclamation Act of 1977; 30 U.S.C. §§ 1234-1328; 30 CFR Part 700 et seq.

Natural Resources

Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act; E.S. 80-3, 08/11/80, 45 Federal Register 59109

Clean Air Act as amended; Public Law Chapter 360; 69 Stat. 322; 42 United States Code 7401 et seq.

Coastal Zone Management Act of 1972 as amended; Public Law 92-583; 86 Stat. 1280; 16 United States Code 1451 et seq.

Endangered Species Act of 1973, as amended; Public Law 93-205; 87 Stat. 884; 16 United States Code 1531 et seq.

Executive Order 11988: Floodplain Management; 42 Federal Register 26951; 3 Code of Federal Regulations 121 (Supp 177)

Executive Order 11990: Protection of Wetlands; 42 Federal Register 26961; 3 Code of Federal Regulations 121 (Supp 177)

Executive Order 11991: Protection and Enhancement of Environmental Quality

Executive Order 12898: Environmental Justice

Federal Caves Resource Protection Act of 1988

Federal Insecticide, Fungicide, and Rodenticide Act; Public Law 92-516; 86 Stat. 973; 7 United States Code 136 et seq.

Federal Water Pollution Control Act (commonly referred to as Clean Water Act); Public Law 92-500; 33 United States Code 1251 et seq. as amended by the Clean Water Act; Public Law 95-217

Fish and Wildlife Coordination Act of 1958 as amended; Public Law 85-624; 72 Stat. 563; 16 United States Code 661 et seq.

Migratory Bird Conservation Act; Public Law Chapter 257; 45 Stat. 1222; 16 United States Code 715 et seq.

Migratory Bird Treaty Act of 1918; Public Law 186; 40 Stat. 755

Magnuson-Stevens Fishery Conservation and Management Act

National Environmental Policy Act of 1969; Public Law 91-190; 83 Stat. 852; 42 United States Code 4321 et seq.

National Park System Final Procedures for Implementing Executive Order. 11988 and 11990 (45 Federal Register 35916 as revised by 47 Federal Register 36718)

Protection and Enhancement of Environmental Quality; Executive Order 11514 as amended, 1970; Executive Order 11991; 35 Federal Register 4247; 1977; 42 Federal Register 26967)

Resource Conservation and Recovery Act; Public Law 94-580; 30 Stat. 1148; 42 United States Code 6901 et seq.

Rivers and Harbors Act of 1899; 33 United States Code Chapter 425, as amended by Public Law 97-332, October 15, 1982 and Public Law 97-449; 33 United States Code 401-403

Water Resources Planning Act of 1965 (Public Law 89-80; 42 United States Code 1962 et seq.) and Water Resource Council's Principles and Standards; 44 Federal Register 723977

Watershed Protection and Flood Prevention Act; Public Law 92-419; 68 Stat. 666; 16 United States Code 100186

Other

Administrative Procedures Act; 5 United States Code 551-559, 701-706

Concessions Policy Act of 1965; Public Law 89-249; 79 Stat. 969; 16 United States Code 20 et seq.

Department of Transportation Act of 1966; Public Law 89-670; 80 Stat. 931; 49 United States Code 303

Energy Supply and Environmental Coordination Act of 1974

Executive Order 12003: Energy Policy and Conservation; 3 Code of Federal Regulations 134 (Supp 1977); 42 United States Code 2601

Executive Order 12088: Federal Compliance with Pollution Control Standards

Executive Order 12372: Intergovernmental Review of Federal Programs; 47 Federal Register 30959

Farmland Protection Policy Act PL-97-98

Forest and Rangeland Renewable Resources Planning Act; Public Law 95-307; 92 Stat. 353; 16 United States Code 1600 et seq.

Freedom of Information Act; Public Law 93-502; 5 United States Code 552 et seq.

Intergovernmental Cooperation Act of 1968; Public Law 90-577; 40 United States Code 531-535 and 31 United States Code 6501-6508

Intergovernmental Coordination Act of 1969; 42 United States Code 4101, 4231, 4233

Noise Control Act of 1972 as amended; Public Law 92-574; 42 United States Code 4901 et seq.

Outdoor Recreation Coordination Act of 1963; Public Law 88-29; 77 Stat. 49

Payment in Lieu of Taxes Act; Public Law 94-565; 90 Stat. 2662; 31 United States Code 6901 et seq.

Surface Transportation Assistance Act of 1982; 96 Stat. 2097; 23 United States Code 101; and many others

Wildfire Disaster Recovery Act; Public Law 101-286

SERVICEWIDE LAWS AND POLICIES

This section summarizes the most appropriate of the legal and administrative mandates that apply to managing all units of the national park service. These are measures that the National Park Service must strive to meet, regardless of the alternative selected for the long-term management of the Cumberland Gap National Historical Park.

The National Park Service Organic Act and the Redwood Act Amendment to the National Park Service General Authorities Act

One of the most important statutory directives for the National Park Service (NPS) is provided by the interrelations of the NPS Organic Act of 1916 and the Redwood Act Amendment to the NPS General Authorities Act of 1970. The Organic Act mandates that the National Park Service "shall promote and regulate the use of Federal areas known as national parks, monuments, and reservations by such means and measures as conform to the fundamental purpose of said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

The General Authorities Act amends the Organic Act to broaden the types of areas that are included in the national park system, such as national seashores, recreation areas, and parkways. The Redwood Act further amends the General Authorities Act to reassert system-wide the high standard of protection set forth in the Organic Act. In the Redwood Act, "Congress further reaffirms, declares, and directs that the promotion and regulation of the various areas of the Nation Park System shall be consistent with and founded in the purpose established by the first section of the Act of August 25, 1916, to the common benefit of all the people of the United States. The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity on the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress."

Both the Organic Act and the General Authorities Act, as amended by the Redwood Act, define a single standard for the management of the park service: to safeguard the units of the national park system, conserving resources and values for enjoyment of all people of the United States and prohibiting impairment. Director's Order 55, Interpreting the National Park Service Organic Act, serves as the NPS interpretation of the meaning of the Organic Act and the General Authorities Act, as amended.

National Historic Preservation Act

The National Historic Preservation Act of 1966 authorized the Secretary of the Interior to "expand and maintain a national register of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, and culture." Section 106 of the act requires federal agencies to consider the effects of their undertakings on National Register properties and to allow the Advisory Council on Historic Preservation "a reasonable opportunity to comment" on such undertakings. The National Register of Historic Places was expanded from the original roster of historic landmarks and areas of the National Park System to a comprehensive inventory of historic properties nationwide. National Park Service actions affecting properties listed on the National Register of Historic Places are subject to review by state historic preservation officers and the Advisory Council.

Section 110 requires among other things that the park to "establish a preservation program to protect and preserve historic properties in consultation with others" and that this program ensure "that historic properties under the jurisdiction or control of [the National park Service], are identified, evaluated, and nominated to the National Register." Further, Section 110 requires "that such properties under the jurisdiction or control of [the park] as are listed in or may be eligible for the National Register are managed and maintained in a way that considers the preservation of their historic, archeological, architectural, and cultural values in compliance with section 106 of this Act and gives special consideration to the preservation of such values in the case of properties designated as having National significance." Section 112 requires that studies or other actions taken with regards to historic properties be done by personnel or contractors who meet appropriate professional qualifications standards developed by the Secretary of the Interior. It also requires that the park maintain data from historic properties studies in an appropriate database available to prospective researchers.

National Environmental Policy Act

The National Environmental Policy Act of 1969 states as policy that federal agencies must assess the environmental impacts of any proposed action that they fund, support, permit, or implement. It specifically directs federal agencies to document the environmental impact of the proposed action, any adverse environmental effects which cannot be avoided should the proposed action be implemented, and alternatives to the proposed action.

The act also established the Council on Environmental Quality, which is charged with the implementation and oversight of the National Environmental Policy Act. The Council on Environmental Quality subsequently developed the legal requirements (40 Code of Federal Regulations 1500-1508) that all federal agencies must follow in evaluating the environmental effects of proposed actions. These procedures involve three levels of documentation: categorical exclusions; environmental assessments; and environmental impact statements. In the National Park Service, construction activities, natural or cultural resource management projects, and park plans trigger the majority of National Environmental Policy Act documents. The National Environmental Policy Act enables the National Park Service to integrate compliance with other legal mandates and provides a format for public involvement. Director's Order 12 sets forth the policy and procedures by which the service will comply with the National Environmental Policy Act.

Clean Air Act

The Clean Air Act provides a legal framework for the National Park Service to preserve and protect parks' air quality related values. The act establishes national ambient air quality standards for certain criteria pollutants. Major provisions of the act are intended to set a goal for cleaner air by setting national primary and secondary ambient air quality standards. Primary standards define levels of air quality necessary to protect public health, while secondary standards define levels necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.

Under the Clean Air Act, the U.S. Environmental Protection Agency is required to set new source performance standards, based on best-demonstrated technology and to establish national emission standards for hazardous air pollutants. The U.S. Environmental Protection Agency is also required to develop programs for prevention of significant deterioration of air quality in attainment areas. Air pollution permits in attainment areas mandate installation of pollution controls that represent the best available control technology.

The Clean Air Act also requires states to develop and submit a state implementation plan for achieving national ambient air quality standards within each state. The state implementation plan must establish state air quality control regions and specify emission limits, schedules, and timetables for compliance

from both stationary and mobile sources. The Clean Air Act requires federal facilities to comply with state air pollution requirements. The Clean Air Act reinforces the NPS Organic Act role as a protector of natural and cultural resources within the national park system. Under the Clean Air Act, the National Park Service is responsible for protecting air quality within park unit boundaries, and for taking appropriate action to do so, when reviewing emission sources within and outside of the park system.

Clean Water Act

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act and the Water Quality Act of 1987, forms the legal framework to support maintenance and restoration of water quality. The Clean Water Act establishes the National Pollutant Discharge Elimination System as the regulatory mechanism to achieve water quality goals by regulating pollutant discharge to navigable streams, lakes, and rivers. Through standards promulgated by individual states, the Clean Water Act requires the NPS to protect its water resources from point and nonpoint sources of pollution. Many NPS construction activities are regulated by the Clean Water Act under stormwater permitting requirements.

Endangered Species Act

The Endangered Species Act of 1973, amended in 1982 and 1987, is intended to prevent the further decline of endangered and threatened plant and animal species and to help in the restoration of populations of these species and their habitats. The Endangered Species Act, jointly administered by the Department of Commerce and the Department of the Interior, requires that each federal agency consult with the U.S. Fish and Wildlife Service to determine whether endangered or threatened species are known to exist or have critical habitats on or in the vicinity of the site of a proposed action.

Section 7(c) of the Endangered Species Act authorizes the U.S. Fish and Wildlife Service to review proposed major federal actions to assess the potential impacts to listed species. In accordance with Section 7 (c), the National Park Service, in consultation with the U.S. Fish and Wildlife Service, must identify and promote the conservation of all federally listed species and their critical habitat within park boundaries.

Executive Orders on Wetlands and Floodplains

Executive Order 11988, Floodplain Management (May 24, 1977), requires federal agencies to evaluate the potential effects of actions in floodplains to avoid adversely impacting floodplains wherever possible. Executive Order 11988 also requires federal agencies to ensure that planning programs and budget requests reflect consideration of flood hazards and floodplain management, including the restoration and preservation of such land areas as natural undeveloped floodplains, and to prescribe procedures to implement the policies and procedures of this executive order.

Executive Order 11990, Protection of Wetlands (May 24, 1977), requires federal agencies to take action to avoid adversely impacting wetlands wherever possible, to minimize wetlands destruction, and to preserve procedures to implement the policies and procedures of this executive order. It is the intent of these executive orders that, wherever possible, federal agencies implement the floodplains/wetlands requirements through existing procedures, such as those internal procedures established to implement National Environmental Policy Act. The National Park Service often integrates compliance with the executive orders with other legal mandates, such as National Environmental Policy Act.

Wilderness Act

The Wilderness Act of 1964 established the National Wilderness Preservation System, composed of federal lands designated as wilderness areas. Wilderness areas are to be administered "for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness." The law states that "the designation of any area of any park, monument, or other unit of the national nark system as a wilderness area shall in no manner lower the standards evolved for the use and preservation of such park, monument, or other unit of the national park system."

Except as specifically provided by law, permanent roads are prohibited within any wilderness area. Except as needed for administrative purposes, temporary roads or use of motorized vehicles or equipment are forbidden within any wilderness area. The following exceptions are permitted: where the use of motorboats is already established, it may be permitted to continue subject to management restrictions; all wheelchairs, including motorized wheelchairs, are allowed in NPS wilderness areas; measures necessary to control fire, insects, and diseases may be taken; and certain mining activities are permitted.

Management Polices 2006

This is an update to the 2001 Management Policies. The policies are derived from the laws that have been enacted to establish and govern the NPS and the National Park System. This document serves as the basic, Servicewide policy manual used by park superintendents and other NPS managers to guide their decision-making. The manual prescribes policies which enable the NPS to preserve park resources and values unimpaired for the enjoyment of future generations, as required by law. The policies have been updated to keep pace with new laws that have been enacted, changes in technology and American demographics, and new understandings of the kinds of actions that are required to best protect the natural and cultural resources of the parks. The policies stress the importance of: using the parks for educational purposes; demonstrating environmental leadership in the parks; managing park facilities and resources in ways that will sustain them for future generations of Americans to enjoy; and working with partners to help accomplish the NPS mission. The new Management Policies is available on the NPS World Wide Web site at http://www.nps.gov/policy/MP2006.pdf.

Director's Order #12

Director's Order #12 describes the policy and procedures by which the National Park Service will comply with the National Environmental Policy Act. The Council on Environmental Quality, part of the Executive Office of the President, is the "caretaker" of National Environmental Policy Act. The National Park Service is required to abide by all National Environmental Policy Act regulations (40 Code of Federal Regulations 1500-1508) and any other procedures and requirements imposed by other higher authorities, such as the Department of the Interior.

Director's Order #24

Director's Order #24: Museum Collections Management Director's Order 24 lays the foundation by which the National Park Service meets its responsibilities toward museum collections. This Director's Order provides policy guidance, standards, and requirements for preserving, protecting, documenting, and providing access to, and use of, National Park Service museum collections.

Director's Order #28 (NPS 1998e)

Director's Order #28, issued pursuant to 16 United States Code (1 through 4), addresses cultural resource management. The National Park Service will protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in the National Park Service Management Policies 2006.

Director's Order #28A

Director's Order #28A: Archeology provides a management framework for planning, reviewing, and undertaking archeological activities and other activities that may affect archeological resources within the National Park System.

Director's Order # 47

Director's Order #47, Soundscape Preservation and Noise Management, articulates National Park Service operational policies that will require, to the fullest extent practicable, the protection, maintenance, or restoration of the natural soundscape resource in a condition unimpaired by inappropriate or excessive noise sources.

Directors Order #77-1

Directors Order #77-1, Wetland Protection, establishes National Park Service (NPS) policies, requirements, and standards for implementing Executive Order (E.O.) 11990: "Protection of Wetlands" (42 Fed. Reg. 26961). E.O. 11990 was issued by President Carter in 1977 in order "…to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative...."

Directors Order #77-2

Directors Order #77-2, Floodplain Management, applies to all NPS proposed actions, including the direct and indirect support of floodplain development, that could adversely affect the natural resources and functions of floodplains, including coastal floodplains, or increase flood risks. This Director's Order also applies to existing actions when they are the subjects of regularly occurring updates of NPS planning documents.

This Director's Order does not apply to historic or archeological structures, sites, or artifacts whose location is integral to their significance or to certain actions as specifically identified in Procedural Manual 77-2.

Ban on Personal Watercraft

Personal watercraft use is a relatively new recreational activity that has been observed in approximately 32 of the 87 units of the national park system that allow motorized boating. The NPS is proposing regulations that will prohibit personal watercraft in units of the national park system unless the NPS determines that such use is appropriate for a specific unit based on that unit's enabling legislation, resources and values, other visitor uses, and overall management objectives.

The Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. §§ 1234-1328; promulgated in 30 CFR Part 700 et seq.) was the first Federal law to regulate the environmental effects of strip mining and to require reclamation of damaged land and water. The Act created two major programs for joint implementation by the states and the Federal government. The first was an environmental protection

program to establish standards and procedures for approving permits and inspecting active coal mining and reclamation operations for surface — as well as the surface impacts of underground — mining. The second was a reclamation program, financed by fees paid by active coal operators, to restore land and water at abandoned mines. Congress included provisions for prohibiting mining in sensitive areas, requirements that coal companies obtain bonds to cover the costs of reclamation in case the companies failed to meet their obligations, and provisions for citizen participation in mine permitting, inspection and enforcement.

The Act created two programs: one for regulating active coal mines and a second for reclaiming abandoned mine lands. SMCRA also created the Office of Surface Mining, an agency within the Department of the Interior, to promulgate regulations, to fund state regulatory and reclamation efforts, and to ensure consistency among state regulatory programs.

The Surface Mining Control and Reclamation Act of 1977

The Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. §§ 1234-1328; promulgated in 30 CFR Part 700 et seq) was the first Federal law to regulate the environmental effects of strip mining and to require reclamation of damaged land and water. The Act created two programs: one for regulating active coal mines and a second for reclaiming abandoned mine lands. SMCRA also created the Office of Surface Mining, an agency within the Department of the Interior, to promulgate regulations, to fund state regulatory and reclamation efforts, and to ensure consistency among state regulatory programs.

Section 522 (e)(3) states that after the enactment of the Act and subject to valid existing rights, no surface coal mining operations except those which exist on the date of enactment of the Act shall be permitted which will adversely affect any publicly owned park or places included in the National Register of Historic Sites unless approved jointly by the regulatory authority and the Federal, State, or local agency with jurisdiction over the park or the historic site.

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APPENDIX C
INFORMATION ON SOILS IN FERN LAKE WATERSHED CUMBERLAND GAP NATIONAL HISTORICAL PARK

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SOILS

The distribution of soil series within the petition area generally corresponds to the topography. Upland soils occur on the mountain slopes above Little Yellow Creek while alluvial soils are confined primarily to the valley floor. The upland soil series in the petition area consists of Bethesda, Muskingum, Hartsells, and Jefferson soil types. Alluvial soils within the petition area are of the Philo and Atkins series. These soils formed from sediments deposited along the floodplain of Little Yellow Creek. Information in this summary was obtained from OSM (1996), USDA (1949) and USDA/NRCS (2006).

1. Upland Soils

Table 1 provides information on the acreages and descriptive locations of upland soil series within the petition area. The following paragraphs describe in greater detail each of those upland soils.

TABLE 1. ACREAGE AND LOCATIONS OF UPLAND SOILS WITHIN THE FERN LAKE PETITION AREA (OSM 1996)

Soil Series	Acres	Percent of Petition Area (%)	Location
Bethesda	105	2.8	Two mountaintop removal areas: one on Mingo Mountain and one on Yellow Creek Ridge. Also two contour stripped areas: one below Yellow Creek Ridge and one below Nicholson Mountain.
Hartsells	40	1.05	Two areas near the upper reach of Fern Lake.
Jefferson	28	0.74	Located immediately above the headwaters of Little Yellow Creek and forms the drainage divide for the Fern Lake watershed.
Muskingum	3421	91	Occupies the south side of Mingo Mountain and the north side of Cumberland Mountain.
Total Upland Soils	3594	95.08 % of the petition area consists of upland soils.	

Bethesda Soil—The Bethesda soils within the petition area formed as a result of previous mining on the crest and along the upper slopes of the Mingo Mountains, including Yellow Creek Ridge and Nicholson Mountain. These past mining operations consisted of two mountaintop removals and two contour mines. The mountaintop removal areas have subsequently been reclaimed and presently support an effective vegetative cover. The contour mined areas were only partially reclaimed. Even though high walls and open pits still remain, volunteer re-vegetation has stabilized the sites.

Because the Bethesda soil series is recent in origin, it has not developed distinctive soil horizons. Thus, the series is unique among the upland soils within the petition area. This has resulted in an A horizon forming directly over C horizon material with many coarse fragments throughout both horizons. The properties of the Bethesda soil are not typical of upland soils within the petition area because the soil consists of mine spoil material whose properties are derived largely from how the spoils were handled and the time the materials have been exposed to weathering. If the spoil had a large percentage of clay and was heavily compacted, water movement within the resulting Bethesda soil may be very slow. On the other hand, if spoil was not heavily compacted and an abundance of coarse fragments and sand was present, water may drain rapidly through the subsequent soil materials. Another factor which has affected the soil development is the surface configuration of the spoil material. Highly compacted, smooth, and steep slopes tend to limit infiltration, promote runoff, and limit the rate of physical and chemical weathering.

Hartsells Soil—There are only two units of Hartsells soils which have been mapped within the petition area. Both are located near the upstream end of Fern Lake on steep knolls. The moderately deep, well

drained and moderately permeable Hartsells soil formed in acid sandstones containing thin strata of shale or siltstone. The soil is highly weathered and generally acidic with low native fertility. This soil consists of a sandy loam, or loam, A horizon, and a well developed B horizon. In some locations there is a developed C horizon, but at other locations the B horizon is directly over bedrock.

Jefferson Soil—Located at the extreme headwaters of Little Yellow Creek and occupying the drainage divide between the watersheds of Fern Lake and Tackett Creek is the Jefferson soil series. This soil formed in colluvium materials transported from the surrounding mountains. Jefferson soil is deep and well-drained with moderately rapid permeability. The A horizon and upper part of the B horizon (upper 3 feet of soil) contain 5 to 35 percent coarse fragments. Below 3 feet, the coarse fragments range from 20 to 80 percent.

Muskingum Soil—The Muskingum soil series is located on the sides and crests of Mingo and Cumberland Mountains. This soil is the most abundant throughout the petition area. It is located on steep mountain slopes on both sides of the Little Yellow Creek valley. The moderately deep, well drained Muskingum soil formed in residuum, weathered from interbedded siltstone, sandstone, and shale. The soil is highly weathered but typically has many coarse fragments in the lower part of the soil profile. The soil is made up of A, B, and C horizons. The A horizon is silt loam or loam with about 10 percent coarse fragments. The B horizon is loam or silt loam with 10 to 30 percent coarse fragments. The C horizon is loam or silt loam with greater than 35 percent coarse fragments.

2. Alluvial Soils

The only alluvial soils within the petition area are the Atkins and Philo soil series. These soils formed on the floodplain and the former floodplain of Little Yellow Creek. These soils are briefly described and properties are summarized in table II-5.

Atkins Soil—The Atkins soil occupies approximately 14 acres, or 0.4 percent, of the petition area. Three acres of the Atkins soil is in a wetland. The wetland will be discussed in section O of this chapter. The other unit of Atkins soil occupies the area surrounding the headwaters of Little Yellow Creek.

Philo Soil—Philo soil occupies approximately 132 acres or 3.5 percent of the petition area. This soil consists of an A horizon overlying a C horizon. The soil developed in alluvium which becomes stratified into sand and gravel at depth. The sand and gravel may be at depths as shallow as 30 inches, but usually is 5 feet or more below the surface of the soil. Textures of all horizons are silt loam to sandy loam.

TABLE 2. SUMMARY OF SOIL PROPERTIES OF ALLUVIAL SOILS IN THE FERN LAKE PETITION AREA (OSM 1996)

Soil Series	Reaction	Soil Depth (inches)	Subsoil Permeability (in/hr)	Hydrologic Soil Group	Texture of Upper 3 feet	Drainage Class
Atkins	Strongly Acid (pH 4.5-5.5)	24-60 over bedrock	0.06-2.0	D	Silt Loam	Poorly Drained
Philo	Medium to Strongly Acid (pH 4.5-6.0)	20-40 over stratified sand and gravel	0.2-2.0 (moderately slow)	B	Silt Loam to Sandy Loam	Moderately Well Drained (subject to stream overflow)

APPENDIX D
CUMBERLAND GAP NATIONAL HISTORICAL PARK SCOPE OF COLLECTIONS STATEMENT

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U.S. DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

CUMBERLAND GAP NATIONAL HISTORICAL PARK

SCOPE OF COLLECTION STATEMENT

Prepared by:

_____ _____
Supervisory Museum Specialist, SEAC Date

_____ _____
Cultural Resource Specialist, CUGA Date

_____ _____
Natural Resource Specialist, CUGA Date

March 2009

Approved by:

_____ _____
Park Superintendent Date

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SCOPE OF COLLECTION STATEMENT

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INTRODUCTION

A. Executive Summary

The park's museum collection includes both cultural and natural history collections. The park's cultural collection includes archeological materials systematically excavated from within the park's boundaries and associated field records (most of which are housed at the NPS Southeast Archeological Center); historic objects associated with the area's periods of significance, including the Civil War occupation of the Gap, the 19th century iron industry, and the early 20th century Hensley Settlement; and archival and manuscript collections such as the Dr. Robert Kincaid papers, oral histories, photographs, land acquisition and tunnel project records, and scientific and resource management records.

The natural history collection includes plant specimens from multiple vegetation surveys, amphibian, fish, reptile, and mammal collections from inventory projects, geologic collections from the tunnel project, and a few miscellaneous paleontological collections. The majority of the natural history collection is a result of the recent inventory projects conducted in the park through the Cumberland Piedmont Network. The animal collections are either the actual preserved animal, a digital picture of the animal, or in the case of many of the mammals, the skulls only. A number of research projects have occurred in the park in recent years that will likely include additional items to add to the collections in the future.

B. Purpose of the Scope of Collection Statement

This Scope of Collection Statement defines the scope of present and future museum collections of Cumberland Gap National Historical Park. These collections contribute directly to the understanding and interpretation of the park's purpose, themes, and resources, as well as containing those objects and specimens that the Service is legally mandated to preserve. This document is intended to ensure that the museum collection is directly and clearly relevant to the park.

C. Legislation Related to NPS Museum Collections

The National Park Service's (NPS) legal mandate for acquiring and preserving museum collections is contained in the *Antiquities Act of 1906* (16 USC 431-433); the *Organic Act of 1916* (16 USC 1 et. Seq.); the *Historic Sites Act of 1935* (16 USC 461-467); the *Management of Museum Properties Act of 1955*, as amended (16 USC 18[f]); the *Reservoir Salvage Act of 1960*, as amended (16 USC 469-469c); the *Archeological and Historic Preservation Act of 1974*, as amended (16 USC 469-469 1-2); the *National Historic Preservation Act of 1966*, as amended (16 USC 470-470t, Sec. 110); the *Archaeological Resources Protection Act of 1979*, as amended (16 USC 470aa-mm); and the National Park Service Omnibus Management Act of 1998 (16 USC 5901).

D. Park History, Significance, Purpose, Themes and Goals

Cumberland Gap National Historical Park was authorized by Congress on June 11, 1940 (54 Stat. 262). In this enabling legislation, the purpose of the park is stated as "… property in the Cumberland Gap-Cumberland Ford areas, being portions of the Warriors Path of the Indians and Wilderness Road of Daniel Boone…are hereby established, dedicated, and set apart as a public park for the benefit and inspiration of the people….".

The enabling legislation was amended on May 26, 1943 (57 Stat. 85) to ensure that the park contained a minimum of 6,000 acres and to enable the states of Kentucky, Tennessee, and Virginia to form a compact in order to acquire lands for the formation of the park. The park was established on September 14, 1955, and dedicated on July 4, 1959.

Another piece of legislation that had a profound effect on Cumberland Gap National Historical Park is the *Proposed Federal Aid Highway Act of 1973* (PL 93-87, Sec. 160). This legislation provided for reconstruction and relocation of Route 25E through the park including construction of a tunnel for the purpose of restoration of the Cumberland Gap and to provide adequate traffic capacity. Upon completion, the highway, tunnel, and associated lands were to be transferred to the NPS and managed as part of Cumberland Gap National Historical Park. This transfer took place in 1996 following completion of the Route 25E tunnel.

The acquisition of park collections began in October 1955 with artifacts that were "field finds" from the park, such as Civil War minie balls, a bayonet, a spike, buttons, bottles, and slag from the Iron Furnace. With the exception of eight gifts, the 57 accessions made through 1957 continued to be field finds.

In April 1957 a Museum Prospectus was completed for the park, identifying four functions to be performed by the park museum collections:

1) Preservation of "objects representative of each major period;"
2) Interpretation of "those broad aspects of the park story which cannot be adequately presented by means of physical features;"
3) Orientation for the visitor to the park to "the area and diversity of features to be found at Cumberland Gap;" and
4) Research, "particularly on the history of Cumberland Gap itself, for the convenience of the park staff – as well as that of the student of some special phase of the park story – the park library will be expanded to include the more valuable printed sources and microfilm copies of outstanding manuscript collections dealing with that story."

The park received 28 donations and gifts for use in exhibits for the new Visitor Center and the study collection in 1958 and 1959, and in 1960 four James Rifle Cannon tubes were transferred to CUGA from Chickamauga Chattanooga national Military Park. At this time the park also began to purchase items for the park collection and exhibit that interpreted the Wilderness Road era. In 1968 the park carried out a systematic effort to purchase and acquire objects associated with the Hensley Settlement.

The first natural history collection was a fossil collected by park staff in 1955. A limited number of specimens were added to the collection in the following years. In 1974, Ross Hinkle from the University of TN, completed a preliminary study of the flora and vegetation of the park. Over 60 plant specimens were added to the collection during this project. The majority of the park's animal specimens and skulls are housed and loaned out to the North Carolina Museum of Natural Sciences. These specimens include amphibians from a 1977 survey, reptiles from a 1991 survey, and fish, and mammal skulls from recent inventories completed in the park through the Cumberland Piedmont Network. A vegetation inventory, also completed through the Cumberland Piedmont Network, increased the collection by over 130 dried plant specimens which are housed at Mammoth Cave National Park. Personnel from the following universities, University of Kentucky, University of Tennessee, Lincoln Memorial University, University of Arkansas, and Appalachian University, have ongoing research permits for projects that may result in additions to the collection. Resource management staff will need to contact these individuals in the future to determine if specimens were collected during their projects and complete the necessary paperwork to accession the specimens.

Remaining accessions are composed of a combination of field finds and donated objects associated with various park themes.

The park museum, housed at the Visitor Center, was completely rehabilitated in 2004 to better interpret and exhibit the park themes and related artifacts. The collection storage room, located in the Ranger Activities compound, was also rehabbed and objects that were scattered throughout the park relocated there in an effort to better centralize and care for the collection.

The park holds more than 281 linear feet of archival records, which have been inconsistently accessioned and catalogued over the years. Other than a Presbyterian document received in May 1959, and two paintings acquired in June of that year, the first archival items, five textbooks, were accessioned in December 1974, followed by 56 historic photographs in 1976. Materials were then accessioned sporadically until the hiring of cultural resource personnel in November 2000.

The considerable backlog of archival records to be catalogued is currently being addressed in a multi-phase project conducted by the park and the Southeast Regional Office. In addition, a Museum Collection Management Plan and Archives and Records Management Plan were completed in 2004; more detailed background on the park's museum collection can be found in these documents.

Currently the museum collection contains more than 12,000 archeological, cultural and natural history, and archival materials.

The significance of the park is defined as follows:

1) The ancient Warrior's Path through the Gap was a travel route from beyond the Great lakes to the Carolina and Georgia coast by American Indians for trade, hunting and warfare.
2) The Cumberland Gap represents a turning point in American history as the Gap witnessed a floodtide of 200,000 to 300,000 settlers pushing through the Appalachian barrier during the late 18th to early 19th century.
3) Situated at the junction of the three states (Kentucky, Tennessee, and Virginia), Cumberland Gap National Historical Park played a strategic role in the Civil War during which this narrow transportation corridor changed hands several times.
4) Cumberland Gap NHP preserves the Hensley Settlement Historic District, a family farmstead consisting of numerous farm cabins, fences, other farm structures, and a one-room log school house that illustrates the hardships faced by families who chose to live a mid-nineteenth century lifestyle well into the 20th century.
5) There are 24 cave features in the park. Gap Cave includes innumerable stalactites and stalagmites, columns, draperies, pools and terrace formations, all in very colorful and extravagant displays.

The 1998 Long-Range Interpretive Plan elaborates on the purpose of the park as follows:

1) Preserve remnants of the prehistoric and historic trails, as well as the associated natural resources, located within and approaching Cumberland Gap.
2) Preserve the Cumberland Gap's viewshed (within the park's boundaries) from Pinnacle Overlook that provides a historic and geologic overview of the park's resources.
3) Preserve the Cumberland Gap's geology, native plant species, and indigenous animal populations in a way that reflects their condition in the late 1700s.
4) Provide opportunities for visitors to appreciate the hardships of historic travelers through Cumberland Gap.
5) Provide opportunities for visitors to hike, camp, and pursue other recreational activities.

The first Collection Management Plan for the park was completed in 1975 and a brief Scope of Collection Statement was included. It lists the primary historical themes for the park (and therefore appropriate related objects and archives for the collection) as the:

1) trans Allegheny Migration of the last half of the eighteenth century and the first quarter of the nineteenth century and
2) Warriors Path of the Indians.

Secondary historical themes are the:

3) Civil War
4) Industrial Boom of the late 1800s and founding of Middlesboro
5) General Industrial Development of the area
6) Development of the Highway through Cumberland Gap during the twentieth century
7) Hensley Settlement, particularly the period 1904-1915.

The scope for natural history collecting included "…any specimen taken as part of a systematic study…." A list of additional specimens not collected in this manner that were desired for the park's collection included specimens of all additional species of zoology and botany species in the park, a representative paleontological collection of each species of fossil, and a representative sample of each rock and mineral for a geology collection. This all-inclusive approach to natural history collecting mirrors a memorandum dated May 6, 1970 by the Natural History Interpretive Specialist in the park files.

A more modest scope of collections approach is reflected in the approved 1986 Scope of Collection Statement for the park. Limits were placed on cultural collections, particularly history items, and many archival materials were thought to be more appropriate for the library collection. Natural history collecting was limited to specimens taken as part of approved systematic studies in the park.

The interpretive themes for Cumberland Gap National Historical Park are detailed in the approved Long-Range Interpretive Plan (1998). The primary theme is listed under cultural history ("Peopling Places" in the NPS Thematic Framework):
"For centuries, Cumberland Gap has been part of a natural corridor through the Allegheny Mountains for bison, American Indians, long hunters, pioneers, soldiers, and motorists."

The secondary theme for the park is listed under natural history:
"Cumberland Gap National Historical Park preserves a long mountain ridge that includes cliffs, caves, streams, and forests where visitors can camp, picnic, and sightsee. The park includes more than 14,000 acres of wilderness where visitors can hike and experience solitude within a vestige of the vast forests that once covered most of eastern North America."

The tertiary interpretive theme is listed under geology:
"Cumberland Gap and the Allegheny Plateau are examples of geologic folded and faulted mountain formations that reveal the uplifting of an ancient seabed."

Another park planning document that is important for the museum collection is the draft Resource Management Plan (ca. 1995). Comments on the park's museum collection in this plan indicate that the cultural collection is "burdened … by a large number of objects that were purchased for use and furnishing of (the) Hensley Settlement. The majority of these objects are not site-related, nor do a significant portion of them have qualitative value." Although living history interpretation of the Settlement has lapsed due to budgetary constraints, objects purchased for that purpose continue to require curatorial storage and care. Statements in the plan indicate that the approach to gaining information about the cultural resources of the park has been piecemeal and no comprehensive historical or archeological studies have been done.

Also according to the Resource Management Plan, a number of natural science studies have been done in the park, but the museum collection contains specimens from only two: 63 floral specimens from a 1975 study conducted by Hinkle, and 23 herpetological specimens from a study conducted by Nicholson (1978). The plan does not emphasize further collecting of natural history specimens other than any potential systematic studies approved by the park.

It is clear from these park planning documents that priorities for the museum collection should be based on the park's primary theme of the Cumberland Gap as a transportation corridor, particularly in relation to Native American use and the westward expansion of Euro- and Afro-Americans into the interior of the continent.

E. Laws, Regulations, and Conventions Related to Museum Collections

Certain objects, specimens, and records are required by regulation and NPS policy to be preserved in the park's museum collection.

Archeological materials, except inalienable and communal property (as defined by the native American Graves Protection and Repatriation Act of 1990 [25 USC 3001-13]), recovered from within park boundaries through systematic collection, are National Park Service property and must be retained in the park's museum collection in accordance with *43 CFR 7.13* and NPS *Management Policies* (2001).

36CFR 2.5g states that natural history collection permits issued by the Superintendent must contain the following conditions: "(1) Specimens placed in displays or collections will bear official National Park Service museum labels and the catalog numbers will be registered in the National Park Service National Catalog; and (2) Specimens and data derived from consumed specimens must be made available to the public and reports and publications resulting from a research specimen collection permit shall be filed with the Superintendent."

In essence, the Park Superintendent must remain accountable for archeological and natural history collections and accompanying project documentation made during approved or permitted systematic research or compliance projects as part of the park's museum collection.

Other laws, regulations, directives and conventions pertinent to the acquisition and management of museum collections include: the *Lacey Act of 1900* (18 USC 43-44); the *Bald Eagle Protection Act of 1940* (16 USC 668a-668d); the *Migratory Bird Treaty Act of 1918* (16 USC 703-711); the *Marine Mammal Protection Act of 1972* (16 USC 1361-1407); the *Endangered Species Act of 1973*, as amended (16 USC 1531-1543); the *American Indian Religious Freedom Act of 1978* (42 USC 1996); the *Native American Graves Protection and Repatriation Act of 1990* (NAGPRA) (25 USC 3001-3013); the *National Parks Omnibus Management Act of 1998* (16 USC 5937); the *Federal Property and Administrative Services Act of 1949*, as amended (40 USC 483[b]); the *Federal Records Act of 1950*, as amended ("Records Management by Federal Agencies" [44 USC 3101 et. Seq.]); Federal Property Management Regulations (FPMR), 41 CFR 101; 410 Departmental Manual, Interior Property Management Regulations (IPMR) "Personal Property Management (Subpart 114-60); 411 Departmental Manual , "Museum Property Management," Chapters 1-3; "Curation of Federally-Owned and Administered Archeological Collections," 36 CFR 79; NAGPRA Final Regulations, 43 CFR 10; "Disposition of Federal Records," 36 CFR 1228; Preservation, Arrangement, Duplication, Exhibition of Records (44 USC 2109); Disposal of Records (44 USC 3301 et. seq.); NPS Director's Order 28, *Cultural Resource Management Guideline* (Release No. 5, 1997); NPS Director's Order 24, *NPS Museum Collections Management* (2000) ; the 1983 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); and the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export, and Transfer of Ownership of Cultural Property (implemented in the United States by P.L. 97-446 in 1983, 19 USC 2601).

F. Structures, Landmarks, and Other Park Resources Listed on National or International Registries

Historic resources within the park listed on the National Register of Historic Places are the Cumberland Gap Historic District and the Hensley Settlement, both listed in 1980; the entire park was listed in 1966.

I. TYPES OF COLLECTIONS

Several categories of museum holdings are included in the park's scope of collection. They fall broadly within the cultural and natural history realms. Within the group of cultural collections are included archeological materials from prehistoric and historic American Indian sites, historic sites relating to the westward movement of Euro- and Afro-Americans through the Cumberland Gap, historic industrial sites, dwellings, farms, and commercial establishments, roadways, and military sites related to the Civil War. History collections include objects related to westward expansion, including tools, clothing, weapons, books, manuscripts and letters; associated records from modern research projects; and park planning records from projects such as the tunnel and Gap restoration. Natural history collections include herbarium specimens, faunal specimens, geological specimens, and associated research project records.

The interpretive themes, resource management objectives, and mandates included in the Introduction Section serve as guidance for acquiring objects, specimens, and archival items for the park's museum collection, and will prevent arbitrary and excessive growth of the collection while ensuring that it remains relevant to the park's mission.

A. Cultural Collection

The purpose of this collection is to preserve a portion of the nation's cultural heritage that relates to the purpose and themes of Cumberland Gap National Historical Park. These items serve to increase knowledge and inspiration of present and future generations through exhibits, interpretive programs, and research as well as providing valuable information for management of the park's resources. The cultural collection consists of archeology and history materials and these are considered separately below. Objects and archival collections with a direct association to the park are more desirable for inclusion within the collection than similar items without such primary significance.

1. Archeology Collection

Archeological collections in the park's museum collection consist of individual objects donated to the park (mainly during the early period of the park's existence) and archeological objects, samples, and associated records collected on systematic archeological projects in support of park management goals or for compliance with legal mandates when land disturbing activities have taken place. As per 43 CFR Part 7, any archeological materials discovered within the park (except inalienable and communal property, as defined by NAGPRA) are the property of the United States and will be maintained as a part of the park's museum collection.

a. Artifacts and Specimens

Two sets of human remains were donated to the park in 1957 and 1958, respectively. The provenience and cultural identity of the remains donated in 1957 are unknown. The remains donated in 1958 are Native American and were collected on the Carl Harris property in Bell County, Kentucky, outside park boundaries. These remains are included in the park's NAGPRA inventory (see Section III).

The systematic collections, with the exception of small collections made by NPS Archeologist Jackson W. Moore at the Iron Foundry and Davis Tavern sites in 1957, and selected items from archeologist Tom des Jean's excavations during the restoration of the Gap, are on loan to the NPS Southeast Archeological Center (SEAC) for the purpose of collection management. SEAC is the designated regional repository for archeological collections.

b. Associated Field Records

All records associated with archeological collections are retained as part of the museum collection. These records include field notes and field forms; field specimen records; drawings and maps; photographic negatives, prints, and slides; videotapes; data sheets; remote sensing materials; artifact inventories; conservation treatment records; electronic data; reports generated from archeological investigations; and any other documents created as part of an archeological project. Although these records are associated with archeological collections, they are classified as history items for cataloging purposes.

The majority of the park has not been surveyed for archeological resources. Attention has focused on the historic district area of the Cumberland Gap itself. Potential archeological resources in the park's caves and wilderness areas have not been assessed, although the Cave Research Foundation is compiling an informal survey as part of their studies, and a PMIS project has been submitted for a thorough baseline inventory of the cultural resources in Gap Cave.

Several archeological studies have been conducted at the park over the past few years. These include: *An Archeological Overview and Assessment of the Cumberland Gap National Historical Park, Kentucky, Tennessee, and Virginia*, produced by the University of Tennessee in 2005; *Archeological Site Monitoring for the Cumberland Gap Rehabilitation Project, 2001-2002*, produced by Tom des Jean, archeologist for the Big South Fork National Recreation Area, in June, 2003; *Documentation and Survey for Archeological Resources in the Cumberland Gap*

National Register Historic District, a report produced by the University of Tennessee in November, 2004. Copies of all these reports are kept at the park. The majority of the collections from these surveys have been loaned to the Southeast Archeological Center, with a few objects maintained in the park's museum storage area.

Archeological research has not yet been carried out in the early 20th century Hensley Settlement. This is considered a gap in the park's knowledge of its archeological resources and in accordance with Service-wide goals, additional archeological inventories will eventually be undertaken.

Uncontrolled surface collecting by visitors and park staff is discouraged. If artifacts are collected by visitors and turned in to park staff, the visitor should be discouraged from further collecting and precise information on the provenience of the objects should be obtained. The objects and provenience data should then be promptly turned in to the Park Curator.

2. History Collection

The park's history collection includes items that directly relate to the park's themes and purpose or result from research projects carried out in or for the park. History collections at Cumberland Gap National Historical Park include objects, books, manuscripts, letters, transcripts, other paper documents including maps and plans, photographic materials, microfilm, microfiche, audio and video tapes. The primary interpretive theme, as stated in the Long-Range Interpretive Plan, is the Cumberland Gap as part of a natural corridor through the Allegheny Mountains for bison, American Indians, long hunters, pioneers, soldiers, and motorists. Secondary and tertiary themes relate to natural resources. Within this broad theme of the Gap as a transportation corridor, collections from different periods are prioritized as follows:

a. Wilderness Road era (1750-1810) / Warriors Path

Since the Wilderness Road through the Gap has been restored to its appearance circa 1780 to 1810, when thousands of pioneers traveled through it to reach Kentucky and the West, priority must be given to collecting items from that period that are associated with this migration, and with the period from 1750 to 1780 when the Wilderness Road was being developed by frontier hunters and explorers. There are few items in the collection that date to this period, much less that are known to be associated with people who traveled through the Wilderness Road.

Priority items for the collection would be those directly associated with Thomas Walker or Daniel Boone, who were instrumental in finding and opening up the Wilderness Road. This paucity of items directly associated with the park's primary theme is regrettable but understandable. Since objects and written

documents directly related to this theme are rare, the park has acquired period pieces for its museum exhibits.

Care must be taken to retain and acquire only those objects and articles of clothing representative of hunters and pioneers who traveled along the Wilderness Road. Any selections for acquisition must be backed up by sound historical research and be included in exhibit plans. Most archival items directly relating to the opening and use of the Wilderness Road are already archived elsewhere. Two important archives are the Draper Collection at the University of Wisconsin in Madison, and the Filson Historical Society collection in Louisville, Kentucky. Any original written accounts, letters, or manuscripts directly relating to the migration of pioneers through the Cumberland Gap would be highly desirable acquisitions for the park if they become available.

Of equal importance to the park's interpretation is the use of the Cumberland Gap as part of the American Indian trail known as the "Warrior's Path." Objects directly relating to the Warrior's Path are likely to be very rare. However, period pieces will be more easily obtainable and there will be some overlap with the equipment used by the Euro-American long hunters and frontiersmen. As with the category above, any acquisitions must be backed by sound historical research confirming the appropriateness and authenticity of the object and there must be a need for the objects expressed in an approved exhibit plan.

c. The Civil War era (1861-1865)

Cumberland Gap was of considerable strategic importance during the U.S. Civil War. The area changed hands three times, and though no battles were fought, several fortifications were built and supply depots were established. The park's collection contains some archeological materials related to the Civil War and a few history objects. A number of Civil War period items were acquired in the early years of the park's existence by incoming loan, purchase, or gift. These include weapons, munitions, and a sketchbook of original drawings. Some of these have since been deaccessioned when loans were returned. Two areas have been identified as lacking in the current collection:

1. documentation on Confederate earthworks in the Cumberland Gap vicinity, particularly in the area of Sugar Run, and
2. appropriate artillery pieces for exhibit in the park's Civil War fortifications.

The latter should not be acquired unless they are known to be original to the site and there exists sufficient funding for maintenance and periodic conservation treatment. Archival items relating to the Civil War era, including photographs, should be carefully evaluated to ensure that they are directly relevant to events that occurred at Cumberland Gap before acquisition. Any original written accounts, letters, or manuscripts

directly relating to the migration of pioneers through the Cumberland Gap would be highly desirable acquisitions for the park if they become available.

c. Transportation corridor

The history of development of roads and the highway through the Cumberland Gap is also of interest. The park currently has a few photographs and other archival materials related to this period. This material will also overlap with documentation for the early development of the park. Any objects acquired from this period must be original to the Cumberland Gap area within the park and/or must be expressed as a need in an approved exhibit plan.

Two other areas of historical interest are outlined in other park planning documents, including the 1986 Statement for Management. They are:

d. Industrial boom era (1880 – 1900)

The industrial boom in the area around Cumberland Gap in the late 19th century, including the founding of Middlesboro, Kentucky on the west side of the Gap, also led to a tourism boom and the building of hotels and resorts in the immediate area. Additional collections from this era for the park museum collection should be confined to objects outlined in an approved exhibit plan and/or archival documents and photographs directly associated with the Cumberland Gap area of the park.

e. The Hensley Settlement era (1903-1951)

Hensley Settlement, a National Register Historic District, was an isolated farming community dating from 1903 to 1951 on Brush Mountain within the wilderness area of the park. Several of the structures in the community were rehabilitated or reconstructed by the NPS in the 1960s and early 1970s. The most important history items related to the Hensley settlement in the park's museum collection are a series of oral history audio tapes created from interviews with family members who lived in the settlement. These are also present in paper transcript form and on compact disks. Some of the structures were partially furnished with objects and furnishings that were mainly period pieces, although some were obtained from former residents and are associated with the site. The purpose of these acquisitions was to support a proposed seasonal living history program. After many of the objects were acquired, a Furnishings Plan was completed for the Willie Gibbons house in 1978. Some of these furnishings were accessioned into the museum collection and others were not. Many of the objects obtained for the Hensley Settlement are now in the park's museum storage areas. Others were deaccessioned in 1993. The most important event affecting this collection was a fire that completely destroyed the Willie Gibbons house and its contents in

2000. The only items recovered were burned pottery fragments; representative examples have been accessioned into the museum collection. It is not known whether they are fragments of previously accessioned objects. The museum objects lost in the fire have not yet been deaccessioned. Further collection of period objects for the Hensley settlement is not anticipated since they cannot be securely exhibited in the structures at the settlement.

3. Archives and Manuscripts

Another category of history collections important to the park's museum collection are associated records from archeological, historical, and natural science research projects conducted by or for park management or by independent researchers through permitted projects. Many records created as part of park development and maintenance should also be accessioned into the museum collection. Many of these have already been assembled as part of the park's archive, including land acquisition records, the Robert Kincaid papers relating to formation of the park, Hensley Settlement reconstruction records, Cumberland Gap Tunnel project records, Wilderness Road Rehabilitation records, and administrative history documents from 1955 to present. Maintenance records, including plans and maps, should also be evaluated for inclusion in the museum collection. These groups of archival materials will continue to grow as research is conducted in the park and management of the park continues into the future. The Museum Services branch of the Southeast Regional Office is currently working with the park to archive these records as part of a multi-phase project which began in 2005.

B. Natural History Collection

Collecting and maintaining a natural history collection is considered a secondary goal to the cultural collection due to the enabling legislation and interpretive themes for the park. However, the natural values of the park are of considerable importance and more than 14,000 of the park's approximately 21,000 acres are being managed as wilderness area. Current park management advocates loan of the park's natural history collections to appropriate outside research institutions for collection management.

Future growth of the collection should be restricted to specimens and associated records generated through:

1. Authorized scholarly research and selective acquisition based on:
    - Applicable park planning documents and resource studies
    - Servicewide initiatives such as the Natural Resource Challenge
    - Enhancing understanding of and promoting increased stewardship of the park's ecosystem
2. Inventory and Monitoring Activities
3. Regulatory and compliance activities such as those mandated by the National Environmental Policy Act of 1969 (NEPA), as amended

Scholarly research may be conducted by park or non-park scientists. All collecting activities must be in compliance with 36 CFR 2.5, the Research Permit and Reporting System, Director's Order #77: Natural Resource Protection (under development), and NPS Natural Resources Management Guideline (1991). All researchers must comply with applicable state and Federal laws regulating collecting, documenting collections, and other associated activities. No collector (including park staff) can work in the park without first obtaining a signed permit. The collections section of the permit application must be completed documenting where collections of specimens and associated records will be housed. Questions related to collecting within the park should be addressed to the park's research coordinator.

Current park natural history collections are divided into four categories: Biology, Geology, Paleontology, and Monitoring Records.

1. Biology

Three collections of biology voucher specimens are currently maintained in the park's collection. A herbarium collection of plant specimens was collected as part of a masters thesis study (University of Tennessee) of the park's flora by C. R. Hinkle in 1975. A duplicate collection may be housed at the University of Tennessee but this has not been confirmed and no loan documentation is present. A wet specimen collection of amphibians is maintained by the North Carolina Museum of Natural Sciences. These amphibian specimens were collected during a masters thesis study (University of Arizona) by C. S. Nicholson in 1978. An additional wet specimen collection of reptiles is also maintained at the North Carolina Museum of Natural Sciences. The reptile specimens were collected by Richard Jenkins in 1991. These collections are small and not accompanied by associated project records other than the final reports. Several other biological studies have been conducted in the park, beginning with reptile, amphibian, and mammal collections made by researchers from the College of William and Mary from 1958 through 1961. Vertebrate fauna were studied in 1979 and aquatic microinvertebrates were studied from 1991 through 1993. No specimens or associated records are present in the museum collection for any of these studies. Reports are kept on file in the Resource Management office.

Recently, the servicewide Natural Resources Challenge and the related Inventory and Monitoring Program have boosted natural science research in the parks. These projects were completed under the auspices of the Inventory and Monitoring Network Administrator. At Cumberland Gap National Historical Park, a herpetofauna study was completed by Third Rock Consultants in 2003. The only collections from this project are two digital photos that are kept at CUGA. Third Rock Consultants also completed a fish inventory project in 2005. Six voucher specimens were collected and preserved and 22 digital photographs were taken of inventoried fish. All these fish collections are loaned out to the North Carolina Museum of Natural Sciences. A vegetation study, completed by

NatureServe in 2006, increased the plant collection by over 130 plant specimens which were pressed and mounted and are currently housed at Mammoth Cave National Park. Finally, a mammal inventory project was completed by Copperhead Consulting in 2006. Over 220 specimens were collected during this project. These mammal specimens have been preserved as skulls and loaned out to the North Carolina Museum of Natural Sciences.

Biological studies recognized as needs by park resource management staff relate to bogs in the Martin's Fork drainage, the threatened blackside dace, cave monitoring and bat populations, and water quality monitoring in those streams not currently monitored. Research studies will continue in the park in the future and care must be taken to ensure that all specimens and associated records are accessioned, cataloged, labeled, and loaned out according to procedures in the Museum Handbook, Part II.

2. Geology

A small geology collection is maintained in the park's museum collection including a few donated mineral and rock specimens on exhibit in the Visitor Center. Another collection of geological specimens was collected during construction of the Cumberland Gap Tunnel. This collection was accessioned into the museum collection and is currently on loan to Western Kentucky University. The collection requires cataloging. No other geological collections or studies are currently anticipated. Any systematic collections that occur in the future must be accessioned into the museum collection and cataloged according to standards in the NPS *Museum Handbook*, Part II.

3. Paleontology

Only two paleontological specimens are currently included in the park's museum collection. No paleontological research is currently planned for the park. Any systematic collections that occur in the future must be accessioned into the museum collection and cataloged according to standards in the NPS *Museum Handbook*, Part II.

4. Monitoring Records

The park resource management staff has undertaken water quality, air quality, and radon testing for several years in selected locations within the park. According to the draft Resource Management Plan, only the water quality testing is sufficient for baseline data. However, monitoring records for all three of these programs must be archived and included in the park's museum collection and cataloged as archival/manuscript collection (History) items.

II. MUSEUM COLLECTIONS SUBJECT TO THE NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT OF 1990

The *Native American Graves Protection and Repatriation Act of 1990* (NAGPRA) requires a written summary of unassociated funerary objects, sacred objects, and objects of cultural patrimony. This summary was completed for Cumberland Gap National Historical Park on October 13, 1992 and, based on current information, no collections that fall within the scope of these *NAGPRA* categories are included in the collection. This information was forwarded to WASO and included in the Servicewide summary distributed to all Indian Tribes, Alaska Native villages, and Native Hawaiian organizations on October 27, 1993. An addendum to this Scope of Collection Statement includes this information.

NAGPRA also requires that a written, item-by-item inventory of Native American human remains and associated funerary objects be completed for each collection no later than November 16, 1995. The park has human remains subject to NAGPRA in its museum collection. This inventory was completed as of September 16, 1995. It is included as an addendum to this Scope of Collection Statement.

III. ACQUISITION

The park acquires objects for its museum collection by gift, purchase, exchange, transfer, field collection, confiscation, and loan. The majority of museum objects and documents are acquired through field collections from legally mandated and research-oriented cultural and natural projects. Acquisition of museum objects and archival and manuscript collections are governed by the park's ability to manage and preserve them according to NPS *Management Policies* (2001), Chapter 5; the standards for managing museum objects in Director's Order #28, *Cultural Resources Management Guideline* (1997); Director's Order #24, *NPS Museum Collection Management* (2000), and the NPS *Museum Handbook*, Part I, "Museum Collections," Part II, "Museum Records," and Part III, "Access and Use."

In accordance with NPS policy, the park will discourage gifts with restrictions or limiting conditions. Incoming loans will be acquired only for a particular purpose such as research or exhibition, and only for a specified period of time. Museum objects are acquired, accessioned, and cataloged in accordance with the NPS *Museum Handbook*, Part II, "Museum Records." In accordance with Director's Order #44, *Personal Property Management Guideline* (1997), all proposals for the acquisition of firearms and ammunition, except archeological field collections, must be reviewed by the Regional or Support Office Curator. Acquisition of firearms included on the Bureau of Alcohol, Tobacco, and Firearms (ATF) list of prohibited and restricted weapons requires concurrent review by the Regional/SO Curator and Regional Law Enforcement Specialist.

The Park Superintendent, by delegation, represents the Director and the Secretary of Interior in accepting title to and responsibility for museum objects. The Superintendent bears the ultimate responsibility for the acquisition and

proper care and management of the museum collection. The Superintendent has delegated day-to-day care of the collection to the Park Curator.

All acquisitions must receive formal approval from the Park Superintendent before they can be accepted into the museum collection. Upon receipt, all newly acquired objects and related documentation must be turned over to the Park Curator. The Park Curator prepares, for the Superintendent's signature, all instruments of conveyance, and letters of thanks, acceptance, or rejection, and transmits them as appropriate to the donor, lender, or other source of acquisition.

Acquisition of donated unprovenienced archeological objects for the museum collection is generally discouraged unless the objects are known to have come from park lands before the park was created, and there is a documented need for the objects in the park's exhibits. Unless confiscated, donations of illegally obtained archeological objects from park lands are not ordinarily accepted so as not to encourage such activity, unless the collector is deceased and there is a documented need for the objects in an exhibit plan.

Collecting, either under permit or by park staff, will be approved only in response to the need for on-site reference, exhibition, or to establish baseline data. The museum collection will not become a repository for collections in excess of these needs.

IV. USES OF COLLECTIONS

In order to fulfill the management goals and purpose of the park as described in the Introduction, the park's museum collections may be used for exhibits, interpretive programs, research, and in publications, films, or other multi-media presentations. The governing consideration in the use of museum objects or archival materials is the conservation of each item in question and of the collection as a whole, and accurate interpretation..
In accordance with NPS *Management Policies* (2001), "Interpretation and Native Americans," the park will not exhibit Native American disinterred skeletal or mummified human remains or photographs or replicas of them. There will be no display of grave goods or other objects if Native Americans who are culturally affiliated with them object to such exhibit.

Researchers may examine objects and archival materials under the conditions and procedures outlined in Director's Order #28, *Cultural Resource Management Guideline* and in the park's written "Conditions for Access to Museum Collections." Outside researchers must make an appointment to access the collection with the Park Superintendent or designee.

Any interpretive use that may be defined as consumptive must be authorized in advance, as outlined in Director's Order #24: *NPS Museum Collections Management*, Director's Order #28: *Cultural Resource Management* (1998), Cultural Resource Management Guideline (1997), and Director's Order #6: *Interpretation and Visitor Services Guideline*. The use of reproductions is preferred to the consumptive use of original objects.

Objects may be loaned out to qualified institutions for purposes of exhibition or research in accordance with the NPS *Museum Handbook*, Part II, Chapter 5, Outgoing Loans (2000). Institutions must meet standards for security, handling, and exhibition of NPS museum objects. Expenses related to loans of museum objects, including shipping and insurance, will normally be assumed by the borrower.

All exhibits containing museum objects must have appropriate security, environmental controls, and proper mounts to ensure the long-term preservation of the objects.

V. RESTRICTIONS

Restrictions in addition to those applying to the use of the museum collection outlined in Section V of this statement are as follows:

Curatorial staff should consult with Tribal governments and traditional religious leaders about the terms and conditions for management of collections from Federal lands that have significance for these groups; and should consult with other indigenous and immigrant ethnic, social, and religious groups that have used the museum collection. Archeological objects in the museum collection shall be made available to persons for use in religious rituals or spiritual activities in accordance with *36 CFR 79*, Section 79.10(c), "Curation of Federally-owned and Administered Archeological Collections." Requests to borrow non-archeological material for religious ritual or spiritual activities will be addressed on a case-by-case basis.

The park will not approve research on human remains without the consent of affiliated group(s).

NPS *Management Policies* (1998) states, "Information regarding the location, nature, and character of archeological, historic, and ethnographic resources may be exempted from public disclosure." Additionally, the same document states, "The identities of community consultants and information about sacred and other culturally sensitive places and practices will be kept confidential when research agreements or other circumstances warrant."

The park's collection contains archival materials and objects of art that are subject to the *Copyright Act of 1976* (17 USC 101-810 et. seq.[1988 & Supp. v. 1993). Restrictions must be placed on the publication of images or

manuscripts and use of oral history tapes and transcripts in the museum collection for those materials that are subject to copyright, when this right has not been signed over to the National Park Service. Oral history tapes made with informants who are still living are also subject to privacy law (5 USC 552a) if permission for their use has not been granted by the interviewees.

The collection of threatened, endangered, or rare plant and animal species will comply with NPS *Management Policies* (1998) and will be in accordance with the provisions of the *Endangered Species Act of 1973*, as amended, and will be strictly limited according to the applicable rules of the U.S. Fish and Wildlife Service. Specimens of species meeting these criteria may be added to the museum collection if they are accidentally killed or found dead of natural causes.

Final disposition of any type specimens collected will be determined at the Servicewide level and will adhere to recognized conventions established for specific disciplines.

VI. MANAGEMENT ACTIONS

This Scope of Collections Statement must be reviewed every two years, and when necessary, must be revised to remain supportive of, and consistent with, any changes in the park's mission. Any revision to this document requires the approval of the Park Superintendent.

This revised Scope of Collections Statement was prepared with a new Collections Management Plan (approved in 2004) and updated in 2009.

The major part of the park's archeological collection is currently on loan to the NPS Southeast Archeological Center for collection management. Loan records for these collections should be brought up to date. A rock and mineral collection is currently on loan to Western Kentucky University. Biological collections from the park are thought to be at the College of William and Mary, Williamsburg, Virginia, the University of Tennessee, Knoxville, and possibly at other institutions. These collections should be located, accessioned, cataloged, and either recalled or placed on loan to these institutions as appropriate.

The accession records should be reviewed for items in the collection on incoming loan. Any objects that will continue to be used in the park's museum exhibits or are considered important to the park's research collection should be evaluated for loan status and acquired for the park's museum collection if possible. Items not considered appropriate to this park's scope of collection should be deaccessioned and returned to the owner. A number of history objects were deaccessioned over a period of several years beginning in the late 1950s. Any deaccessions

deemed inappropriate by the Park Curator should be evaluated by the Park Collections Advisory Committee. Proper deaccession paperwork should completed for all former and future deaccessioned items.

Objects acquired in conjunction with interpretation of the Hensley Settlement should be inventoried. Accessioned objects destroyed in the fire at the Willie Gibbons house must be identified and deaccessioned. Ceramic fragments recovered from the house ruins should also be deaccessioned unless they are fragments of objects original to the house. Other accessioned objects that are not original to the site should be deaccessioned. Those objects that are appropriate for interpretive programs can be retained as non-museum property. Accessioned items that are original to the site or are associated with the settlement's former residents during their time at the settlement should be retained in the park's museum collection and preserved. Unaccessioned objects associated with the settlement should be evaluated for possible accessioning if they prove to be original to the site or associated with former residents during their time at the settlement.

The archeological collection made at the site of the Watts Brothers site in Cumberland Gap in 1987 (CUGA Accession 272), currently managed at the Southeast Archeological Center, should be evaluated for deaccessioning of non-diagnostic, modern objects. This can be accomplished through collaboration with Center Collection Management staff and the Principal Investigator for the project.

The mural at the Pinnacles Overlook shelter should be evaluated for inclusion in the museum collection. It is not currently listed in the List of Classified Structures and should be accounted for in one of these systems.

The oral history tapes from interviews conducted with the Hensley Settlement residents fall under the restrictions of copyright law if these rights have not been signed over to the NPS. Privacy law also applies for those informants still living if release forms have not been signed. Documentation for these interviews should be researched for this information and appropriate restrictions placed on these materials in terms of research and use if necessary.

APPENDIX E
WETLANDS INFORMATION

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Types and Acreages of Palustrine and Lacustrine National Wetland Inventory Types that Occur in Cumberland Gap National Historical Park.[1, 2]

NWI Code Abbreviation/Number of Acres Within Park	NWI Classification	Class/SubClass	Modifiers
PEM1A 0.5 Acres	[P] Palustrine, [EM] Emergent, [1] Persistent, [A] Temporarily Flooded	[EM] Emergent - Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. (1) Persistent - Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.	[A] Temporarily Flooded - Surface water is present for brief periods during growing season, but the water table usually lies well below the soil surface. Plants that grow both in uplands and wetlands may be characteristic of this water regime.
PEM1C 0.1 Acres	[P] Palustrine, [EM] Emergent, [1] Persistent, [C] Seasonally Flooded	[EM] Emergent - Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. (1) Persistent - Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.	[C] Seasonally Flooded - Surface water is present for extended periods especially early in the growing season but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.

Types and Acreages of Palustrine and Lacustrine National Wetland Inventory Types that Occur in Cumberland Gap National Historical Park.[1, 2] (continued)

NWI Code Abbreviation/Number of Acres Within Park	NWI Classification	Class/SubClass	Modifiers
PFO4A 19.5 Acres	[P] Palustrine, [FO] Forested, [4] Needle-Leaved Evergreen, [A] Temporarily Flooded	[FO] Forested - Characterized by woody vegetation that is 6 m tall or taller. (4) Needle-leaved Evergreen - Woody gymnosperms with green, needle-shaped, or scale-like leaves that are retained by plants throughout the year; e.g. black spruce (Picea mariana).	[A] Temporarily Flooded - Surface water is present for brief periods during growing season, but the water table usually lies well below the soil surface. Plants that grow both in uplands and wetlands may be characteristic of this water regime.
PFO1Ah 21.2 Acres	[P] Palustrine, [FO] Forested, [1] Broad-Leaved Deciduous, [A] Temporarily Flooded, [h] Diked/Impounded	[FO] Forested - Characterized by woody vegetation that is 6 m tall or taller. (1) Broad-leaved Deciduous - Woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season; e.g., black ash (Fraxinus nigra).	[A] Temporarily Flooded - Surface water is present for brief periods during growing season, but the water table usually lies well below the soil surface. Plants that grow both in uplands and wetlands may be characteristic of this water regime. [h] Diked / Impounded - Created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water.
PFO1C 18.3 Acres	[P] Palustrine, [FO] Forested, [1] Broad-Leaved Deciduous, [C] Seasonally Flooded	[FO] Forested - Characterized by woody vegetation that is 6 m tall or taller. (1) Broad-leaved Deciduous - Woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season; e.g., black ash (Fraxinus nigra).	[C] Seasonally Flooded - Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.
PFO1A 22.7 Acres	[P] Palustrine, [FO] Forested, [1] Broad-Leaved Deciduous, [A] Temporarily Flooded	[FO] Forested - Characterized by woody vegetation that is 6 m tall or taller. (1) Broad-leaved Deciduous - Woody angiosperms (trees or shrubs) with relatively wide, flat	[A] Temporarily Flooded - Surface water is present for brief periods during growing season, but the water table usually lies well below the soil surface. Plants that grow both in

Types and Acreages of Palustrine and Lacustrine National Wetland Inventory Types that Occur in Cumberland Gap National Historical Park.[1, 2] (continued)

NWI Code Abbreviation/Number of Acres Within Park	NWI Classification	Class/SubClass	Modifiers
		leaves that are shed during the cold or dry season; e.g., black ash (Fraxinus nigra).	uplands and wetlands may be characteristic of this water regime.
PFO1Eh 1.2 Acres	[P] Palustrine, [FO] Forested, [1] Broad-Leaved Deciduous, [E] Seasonally Flooded/Saturated, [h] Diked/Impounded	[FO] Forested - Characterized by woody vegetation that is 6 m tall or taller. (1) Broad-leaved Deciduous -– no definition given	[E] Seasonally Flooded/Saturated - Surface water is present for extended periods especially early in the growing season and when surface water is absent substrate remains saturated near the surface for most of the growing season. [h] Diked / Impounded - Created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water.
PFO1/4A 25.9 Acres	[P] Palustrine, [FO] Forested, [1] Broad-Leaved Deciduous / , [FO] Forested, [4] Needle-Leaved Evergreen, [A] Temporarily Flooded	[FO] Forested - Characterized by woody vegetation that is 6 m tall or taller. (1) Broad-leaved Deciduous –no definition given (4) Needle-leaved Evergreen - Woody gymnosperms with green, needle-shaped, or scale-like leaves that are retained by plants throughout the year; e.g. black spruce (Picea mariana).	[A] Temporarily Flooded - Surface water is present for brief periods during growing season, but the water table usually lies well below the soil surface. Plants that grow both in uplands and wetlands may be characteristic of this water regime.
PSS1/EM1C 1.8 Acres	[P] Palustrine, [SS] Scrub-Shrub, [1] Broad-Leaved Deciduous / , [EM] Emergent, [1] Persistent, [C] Seasonally Flooded	[SS] Scrub-Shrub - Includes areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees (saplings), and trees or shrubs that are small or stunted because of environmental conditions (1) Broad-leaved Deciduous – no definition given	[C] Seasonally Flooded - Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the

Types and Acreages of Palustrine and Lacustrine National Wetland Inventory Types that Occur in Cumberland Gap National Historical Park.[1, 2] (continued)

NWI Code Abbreviation/Number of Acres Within Park	NWI Classification	Class/SubClass	Modifiers
		[EM] Emergent - Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. (1) Persistent - Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.	ground surface.

Types and Acreages of Palustrine and Lacustrine National Wetland Inventory Types that Occur in Cumberland Gap National Historical Park.[1, 2] (continued)

NWI Code Abbreviation/Number of Acres Within Park	NWI Classification	Class/SubClass	Modifiers
PSS1/FO4A 13.0 Acres	[P] Palustrine, [SS] Scrub-Shrub, [1] Broad-Leaved Deciduous / , [FO] Forested, [4] Needle-Leaved Evergreen, [A] Temporarily Flooded	[SS] Scrub-Shrub - Includes areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees (saplings), and trees or shrubs that are small or stunted because of environmental conditions (1) Broad-leaved Deciduous – no definition given [FO] Forested - Characterized by woody vegetation that is 6 m tall or taller. (4) Needle-leaved Evergreen - Woody gymnosperms with green, needle-shaped, or scale-like leaves that are retained by plants throughout the year; e.g. black spruce (Picea mariana).	[A] Temporarily Flooded - Surface water is present for brief periods during growing season, but the water table usually lies well below the soil surface. Plants that grow both in uplands and wetlands may be characteristic of this water regime.

Types and Acreages of Palustrine and Lacustrine National Wetland Inventory Types that Occur in Cumberland Gap National Historical Park.[1, 2] (continued)

NWI Code Abbreviation/Number of Acres Within Park	NWI Classification	Class/SubClass	Modifiers
PSS1/FO4C 1.9 Acres	[P] Palustrine, [SS] Scrub-Shrub, [1] Broad-Leaved Deciduous / , [FO] Forested, [4] Needle-Leaved Evergreen, [C] Seasonally Flooded	[SS] Scrub-Shrub - Includes areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees (saplings), and trees or shrubs that are small or stunted because of environmental conditions [FO] Forested - Characterized by woody vegetation that is 6 m tall or taller. (4) Needle-leaved Evergreen - Woody gymnosperms with green, needle-shaped, or scale-like leaves that are retained by plants throughout the year; e.g. black spruce (Picea mariana).	[C] Seasonally Flooded - Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.
PSS3/FO4A 4.8 Acres	[P] Palustrine, [SS] Scrub-Shrub, [3] Broad-Leaved Evergreen / , [FO] Forested, [4] Needle-Leaved Evergreen, [A] Temporarily Flooded	[SS] Scrub-Shrub - Includes areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees (saplings), and trees or shrubs that are small or stunted because of environmental conditions 4) Needle-leaved Evergreen - Woody gymnosperms with green, needle-shaped, or scale-like leaves that are retained by plants throughout the year; e.g. black spruce (Picea mariana).	[A] Temporarily Flooded - Surface water is present for brief periods during growing season, but the water table usually lies well below the soil surface. Plants that grow both in uplands and wetlands may be characteristic of this water regime.

Types and Acreages of Palustrine and Lacustrine National Wetland Inventory Types that Occur in Cumberland Gap National Historical Park.[1, 2] (continued)

NWI Code Abbreviation/Number of Acres Within Park	NWI Classification	Class/SubClass	Modifiers
PUBFh 0.5 Acres	[P] Palustrine, [UB] Unconsolidated Bottom, [F] Semipermanently Flooded, [h] Diked/Impounded	[UB] Unconsolidated Bottom - Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.	[F] Semipermanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface. [h] Diked / Impounded - Created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water.
PUBHh 0.4 Acres	[P] Palustrine, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [h] Diked/Impounded	[UB] Unconsolidated Bottom - Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.	[H] Permanently Flooded - Water covers the land surface throughout the year in all years. [h] Diked / Impounded - Created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water.
PUBHx 1.2 Acres	[P] Palustrine, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [x] Excavated	[UB] Unconsolidated Bottom - Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.	[H] Permanently Flooded - Water covers the land surface throughout the year in all years. [x] Excavated - Lies within a basin or channel excavated by man.

Types and Acreages of Palustrine and Lacustrine National Wetland Inventory Types that Occur in Cumberland Gap National Historical Park.[1, 2] (continued)

NWI Code Abbreviation/Number of Acres Within Park	NWI Classification	Class/SubClass	Modifiers
L1UBHh 108.7 Acres	[L] Lacustrine, [1] Limnetic, [UB] Unconsolidated Bottom, [H] Permanently Flooded, [h] Diked/Impounded	[UB] Unconsolidated Bottom - Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.	[H] Permanently Flooded - Water covers the land surface throughout the year in all years. [h] Diked / Impounded - Created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water.

[1] [P] Palustrine - The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5 ppt. Wetlands lacking such vegetation are also included if they exhibit all of the following characteristics: are less than 8 hectares (20 acres); do not have an active wave-formed or bedrock shoreline feature; have at low water a depth less than 2 meters (6.6 feet) in the deepest part of the basin; have a salinity due to ocean-derived salts of less than 0.5 ppt.

[L] Lacustrine – The Lacustrine System includes wetlands and deepwater habitats with all of the following characteristics: 1. situated in a topographic depression or a dammed river channel; 2. lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage. 3. Total area exceeds 8 hectares (20 acres).

[2] Source: USFWS National Wetland Inventory, 2007.

APPENDIX F
SUMMARY OF FISH AND MACROINVERTEBRATE STUDIES

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APPENDIX F
SUMMARY OF FISH AND BENTHIC INVERTEBRATE STUDIES COMPLETED IN CUMBERLAND GAP NATIONAL HISTORICAL PARK

Fish Studies

National Park Service Studies

Barbour et al. (1979) conducted a survey of fish in the park. Appendix D provides a detailed summary of this study. The following is a general summary of this study, excerpted from the report:

- Streams inside Cumberland Gap National Park are all small, seldom reaching third order. As a consequence, the abundance of fish species is low; many forms which are widely distributed within the Cumberland basin on the Kentucky side of the Park and in the Tennessee basin on the Virginia-Tennessee side, are absent within Park boundaries. Fern Lake, an impoundment lying just outside the Park, influences the fish faunal of Yellow Creek to some degree.

- Streams in the Park are clear and generally uncontaminated by pollutants of human origin. Considering their small size, they maintain good flow through the summer and autumn low stages. In many cases their high quality contrasts strikingly with streams they join just outside the Park. Streams of the Park constitute a valuable aquatic resource of the region.

- The fish survey of Cumberland Gap National Historical Park recorded 27 species inside the Park boundary. Yellow Creek with its tributary, Davis Branch, is the only stream within the Park to contain a complex species assemblage. Twenty-three species were captured there.

- No catfish were taken during this study. Black bullhead or yellow bullhead are suspected to occur in Yellow Creek, because Dr. Barbour observed a catfish at the Park boundary near the railway bridge. Channel catfish have been stocked in Fern Lake and are possibly native to Yellow Creek. The stonecat and brindled mad tom are two dwarf catfishes which might turn up in Yellow Creek.

- Several minnows, whitetail shiner (*Notropis galacturus*) , rosefin shiner (*Notropis ardens*) , rosyface shiner (*Notropis rubellus*), and possibly others are likely to appear occasionally in Yellow Creek.

- Besides the yellow perch and channel catfish, other species, including rainbow trout and smallmouth bass, have been stocked in Fern Lake. Specimens washed over the spillway will enter Yellow Creek.

- The rich fish fauna of the Tennessee River basin is virtually precluded access to the Park by the extremely small size of streams on that side of Cumberland Mountain. Gap Creek could be an exception to the rule because it is fed by a large, permanent spring. Sewage pollution in the past had been responsible for the reduction or elimination of fish in the creek. Only two forms, blacknose dace and banded sculpin, were caught during the survey. Since the creek sinks and reemerges before entering the Powell River, reinvasion could be indefinitely delayed. By mutual agreement the National Park Service and the Tennessee Department of Fish and wildlife could collect fishes from lower Gap Creek or a nearby stream of third or fourth order, and reintroduce these to upper Gap Creek with no danger of upsetting natural faunal relationships.

2004 Fish Inventory Project

An inventory of fish species was conducted in 2004 at Cumberland Gap National Historical Park by Albert W. Remley of Third Rock Consultants. Four warm-water and two cold-water reaches were sampled for a total of 1410 meters of stream length. 1,946 individuals representing 22 species were observed during this project. The species included nine minnows, six sunfish, four darters, two suckers, and one sculpin. The minnows were the most abundant group of fishes found during this survey.

Fish sampling was conducted during the month of September, 2004. The streams sampled included Davis Branch, Gap Creek, Little Yellow Creek, Martins Fork, Shillalah Creek, Sugar Run, and Station Creek. Due to the differences in habitat along Davis Branch, two sites were sampled; one site within the beaver ponds and one downstream of the beaver ponds. For the purpose of this study the site within the beaver pond was considered a wetland.

The warm-water reaches, Davis Branch, Sugar Run, Little Yellow Creek, and Station Creek, yielded the highest number of individuals (1593) and species (22) (Remley 2005). The cold-water reaches, Shillalah Creek and Martins Fork, were practically fishless, yielding only 2 creek chub individuals. No brook trout were present in either stream. The acidic nature of these streams may be a contributing factor to the absence of a viable fish population on the sections within the park.

The top three species found during the study were blacknose dace (*Rhinichthys atratulus*) 426 individuals, creek chub (Semotilus atromaculatus) 390 individuals, and redbreast sunfish (Lepomis auritus) 318 individuals (Remley 2005). Thirty one individuals of the federally threatened blackside dace (Phoxinus cumberlandensis) were found in the two Davis Branch reaches (Remley 2005). Only two individuals were found in the upstream beaver pond area.

The species found in previous surveys but not observed during this survey include arrow darter (*Etheostoma sagitta*), snubnose darter (*Etheostoma s. simoterum*), green sunfish (Lepomis cyanellus), whitetail shiner (*Notropis galacturus*), longear sunfish (Lepomis megalotis), and brook trout (Salvelinus fontinalis).

This study supports Stephens' studies that have observed a decrease in the blackside dace population in the upper reaches of Davis Branch. The habitat alteration by beaver has elevated water temperature, increased siltation in the substrate and reduced the canopy cover. Blackside dace prefer cool streams with rocky substrates and good canopy cover. In addition, the increases in the sunfish population in this section of the creek may be decreasing the blackside dace population through predation.

FISH SPECIES OF CUMBERLAND GAP NATIONAL HISTORICAL PARK BASED ON AN INVENTORY STUDY CONDUCTED IN 2004 – THIRD ROCK CONSULTANTS

Common Name	Scientific Name
Minnows	
Central stoneroller	Campostoma anomalum
Silverjaw minnow	Ericymba buccata
Striped shiner	Notropis chrysocephalus
Rosyface shiner	Notropis rubellus
Blackside dace	Phoxinus cumberlandensis
Southern redbelly dace	Phoxinus erythrogaster
Bluntnose minnow	Pimephales notatus
Blacknose dace	Rhinichthys atratulus
Creek chub	Semotilus atromaculatus
Suckers	
White sucker	Catostomus commersoni
Northern hogsucker	Hypentelium nigricans
Sculpins	
Banded sculpin	Cottus carolinae
Sunfish	
Rock bass	Ambloplites rupestris
Redbreast sunfish	Lepomis auritus
Bluegill	Lepomis macrochirus
Warmouth	Lepomis gulosus
Spotted bass	Micropterus punctulatus
Largemouth bass	Micropterus salmoides
Darters	
Greenside darter	Etheostoma blennoides
Rainbow darter	Etheostoma caeruleum
Fantail darter	Etheostoma flabellare
Stripetail darter	Etheostoma kenicotti

Benthic Invertebrate Studies

Copeland et al. (1992) prepared a report on benthic macroinvertebrates collected at five stations on Little Yellow Creek, two on Gap Creek, five on Davis Branch, two on Tunnel Creek, one on Dark Ridge Creek, and one on Sugar Rune (total of 16 stations). They measured taxa richness, species diversity, equitability or eveness, relative abundance, the Ephemeroptera/Plecoptera/Trichoptera Index (EPT Index), and the functional feeding group of each organism. Sampling was conducted during June and October, 1990, and April, 1991. Appendix E provides excerpts from their study for each of the major stream features. The following is an overall summary of this information:

- With the possible exception of Tunnel Creek and the portion of Yellow Creek which receives water from Tunnel Creek, the streams that were studied are in good condition.
- Sedimentation is changing substrates within Tunnel Creek and Little Yellow Creek downstream of the confluence of Tunnel Creek as gravel, cobble, and rock are covered with silt.
- They predicted that after the tunnel project was completed, the streams should recover.
- The observed low taxa richness and species diversity is typical of headwater streams.
- The percentage of taxa richness composed of Ephemeroptera/Plecoptera/Trichoptera (EPT) is high.

Skelton and Eisenhour (1993) summarized results from the 16 stations for data collected between July, 1993 and February, 1994. This was a continuation of the study by Copeland et al. (1992). Quarterly sampling was conducted in Little Creek, Yellow Creek, Gap Creek, Davis Branch, Tunnel Creek, Dark Ridge Creek, and Sugar Run. However, the study by Skelton and Eisenhour (1995) added two "reference" stations in Martins Fork and Shillalah Creek in January, 1992 because they were remotely located and were not visibly impacted by man's activities. Two stations were also added in Lewis Hollow and Station Creek because of planned construction associated with U.S. Rt. 58. The following is a summary of the study:

- Davis Branch – Overall decrease in taxa diversity between 1991 (the previous study by Copeland et al.) and February, 1993. The number of species was similar to the previous study by Copeland et al (1992). The EPT taxa were 60% of the total species present, similar to the previous study. The stream was estimated to be in good condition. However, it's proximity to KY 988 and U.S. 25-E was predicted to cause degradation of the benthic populations and the blackside dace.
- Dark Ridge – While no impacts appeared to be affecting this creek, taxa richness had decreased by about 50% beginning in May, 1992. However, the percentage of EPT taxa was fairly stable and actually increased over the last two collecting periods. Sampling methods may have affected these results.
- Gap Creek – Did not appear to have changed since the last study, except at one station below the U.S. 25 construction zone. The creek did not appear to be severely degraded and was expected to improve over time.
- Lewis Hollow – This stream was characterized by low taxa richness, but water quality appeared to be good. 89% of the organisms collected were EPT taxa.

- Martins Fork – This is one of the two control creeks. Benthic populations in this stream were about average in comparison to other streams sampled in the park. 70% of the organisms sampled were EPT. The remote nature of this stream should help insure the continued good health of benthic populations.

- Shillalah Creek – This is one of the two control creeks. Taxa richness was not very high, but 80% of the organisms collected in February were EPT taxa.

- Sugar Run – Appeared to be in good health in February 1992. The EPT taxa made up at least 50% of the samples collected. This stream was predicted to exhibit good health since no projects are planned that could affect it. Outside the park, it is affected by highway runoff.

- Station Creek – This stream appeared to be healthy. Sampling appeared to have been hindered, however. Future construction associated with U.S. Route 58 was predicted to have impacts on this stream.

- Tunnel Creek – This stream was described as intermittent, depending on weather, which was supported by the sampling results. This stream was strongly affected by the construction of the U.S. 25E tunnel, since all runoff associated with construction was directed to this creek. Only three taxa were collected here. Recovery of benthic populations was expected to occur over time, however.

- Little Yellow Creek – This stream was seriously affected by the construction of the U.S. 25E tunnel. Severe degradation of benthic populations was observed below the confluence of Little Yellow Creek and Tunnel Creek. However, recovery was observed and improvements were predicted over time as silt washed out of the stream.

Skelton and Fraley (1995) summarized the results of continued monitoring in the park. The following is a summary of the results of this study:

- The same 16 stations sampled by Skelton and Eisenhour were sampled quarterly between July, 1993 and February, 1994. Not all of the same stations were sampled. Additional types of EPT statistics were included to more accurately reflect changes in pH and increased siltation. Changes in EPT taxa were described as being especially important, although all the other indicators are also important.

- Dry Branch – Only one station was sampled just above the confluence with Little Yellow River. No change in the healthy condition of this stream was noted.

- Gap Creek – Based on the stations sampled, the diversity at this station remained relatively stable during the study. The high percentage of EPT taxa indicate the stream was in good health.

- Lewis Hollow – This was a control stream for future highway activities associated with U.S. Highway 58. Limited sampling and small size of the stream were said to affect the low number of taxa observed.

- Martins Fork – This is a small control stream located in a remote section of the park. Sampling on one occasion indicated the stream is still in good health and has not changed significantly since the last sampling event.

- Shillalah Creek – This is also a control stream. The stream was characterized as being in good ecological condition, with high numbers of diversity and EPT statistics.

- Station Creek – This is being monitored to detect potential effects of U.S. Highway 58 construction in the future. It would also be affected by any construction in the Wilderness Road Campground. This is a medium gradient stream that was sampled only once during the study. The overall condition of the creek had improved since the previous study, although one station (ST10) experienced a large drop in the total number of specimens collected between November, 1993 and February, 1994.

- Sugar Run – A sharp drop in the number of specimens collected in July, 1993 (33 specimens collected versus a previous low number of specimens collected of 72 in October, 1992). Only 10 taxa were collected; half as many as were collected previously. This was possibly attributed to sampling. Additional sampling was recommended to assess the situation further.

- Tunnel Creek – This stream has continuously been affected by tunnel construction runoff. Wide variations in pH and sediment loads were said to severely impact benthic populations. As a result the benthic populations were reduced to 3-4 taxa.

- Little Yellow Creek – This stream was used to monitor for effects of tunnel and highway construction. The upper reaches were characterized as being fairly healthy. Diversity remained stable during the course of the study. The stations below the construction area were severely affected, however. Changes in pH and sediment loading are the two primary factors that affected benthic populations. Rapid re-colonization from upstream control areas was thought to occur, however, although it would take longer as the distance from the control areas increased. It was predicted that the area would recover over the long term.

The overall conclusion of this study was that the benthic populations had generally remained the same. Tunnel Creek and Yellow Creek were still in the process of recovery. The pH levels had stabilized at the time, but siltation probably was still affecting Tunnel Creek and the lower stations of Little Yellow Creek. All statistics had risen since the last sampling, which was said could potentially represent a marked improvement in the areas previously, severely affected by tunnel runoff.

Tennessee Department of Environment and Conservation Studies

As part of the analyses of allegations of the Fern Lake lands unsuitable for mining petition, an interagency team conducted a biological survey of Little Yellow Creek upstream of Fern Lake. The Tennessee Department of Environment and Conservation (TDEC, 1995) reported on the results of this study. The following is an excerpted summary of this study:

- Quantitative assessment of fish community structure and qualitative assessment of benthic macroinvertebrate communities were conducted in conjunction with aquatic and riparian habitat assessment at four sampling locations on Little Yellow Creek upstream of Fern Lake.

- The 1995 investigation by TDEC was conducted in part to assess the health of a population of blackside dace (*Phoxinus cumberlandensis*), cyprinid (minnow) (listed under The Endangered Species Act as threatened by the U.S. Fish and Wildlife Service) (52 FR 22580) and as endangered in the State of Tennessee (Eager and Hatcher, 1983). The presence of blackside dace in Little Yellow Creek was initially identified by McCoy and McCoy Environmental Consultants (1993) as

part of baseline environmental information provided in an application by Appolo Fuels, Inc., to conduct surface mining in the Little Yellow Creek watershed.

- The TDEC (1995) study indicated that fish community diversity was reduced in Little Yellow Creek upstream of Fern Lake. Eight species of fish were identified, dominated by creek chub (*Semotilus attromaculatus*). The primary stress to aquatic communities in upper Little Yellow Creek is sedimentation and stream size. Qualitative field assessment of the stream channel bedload indicated a high ratio of sand to gravel sized substrate. Small particle size substrate is undesirable because of instability during storm flow and because of habitat reduction associated with filling of interstices between cobble and boulder sized particles. The increased sediment and gravel loading in the Little Yellow Creek watershed is primarily attributable to previous coal mining activity and to a lesser extent, road construction and logging activity.

- Although results of the TDEC and McCoy and McCoy investigations indicated moderate stress to the uppermost reaches of Little Yellow Creek, a thriving population of blackside dace persists in Little Yellow Creek above Fern Lake. Blackside dace were common at all sampling locations, third in frequency of occurrence only to the creek chub and blacknose dace. The continued survival of a healthy population of blackside dace can be attributed to the presence of silt free areas downstream of riffles, which afford suitable spawning habitat, and to an undisturbed zone of riparian vegetation, the shading of which attenuates stream temperature increase during the summer months.

- Little Yellow Creek was impounded to form Fern Lake. As a result of impoundment, aquatic habitat in Little Yellow Creek was altered. A biological survey of Fern Lake has not been conducted; however, biological community structure following impoundment of upland streams shifts from minnow and darter dominated stream species to lacustrine species such as bass, bream, and catfish. As a consequence of impoundment, the downstream extent of the blackside dace population in Little Yellow Creek is limited by Fern Lake. In addition, Fern Lake is a barrier to downstream "seeding" of blackside dace to lower reaches of the Yellow Creek watershed. Consequently exchange of genetic information is not possible without direct intervention through transplanting or rearing. Although Fern Lake is a limiting factor to blackside dace, the lake serves as a pollutant sink for moderate siltation and chemical loading associated with upstream land use activity.

- In summary, Yellow Creek upstream of Fern Lake is a moderately stressed aquatic system supporting a reduced assemblage of aquatic fauna. The predominant stress to the stream is sediment loading and erosion associated with land use activity in the watershed; primarily coal mining and logging. In addition, poorly sustained stream flow is a limiting factor, resulting in a fish community comprised of drought tolerant species. Impoundment by Fern Lake attenuates upstream impacts through dilution and settling. Little Yellow Creek, immediately downstream of Fern Lake, is largely unstressed; however, construction activity at the Cumberland Gap tunnel has reduced the fishery community of Little Yellow Creek further downstream. Davis Branch, a tributary to Little Yellow Creek is largely unstressed, supporting the most diverse assemblage of fish in the entire Yellow Creek watershed. The Kentucky Division of Water has identified Little Yellow Creek and Davis Branch as important refuges for "nursery stock" of fish for lower reaches of the Yellow Creek watershed, which is stressed by various municipal activities, channel alteration, and land use activities such as coal mining, timbering, and road construction.

Study by Stephens (1993, 2006/2007)

The relative health of Little Yellow Creek upstream of Fern Lake can be judged by comparison to Davis Branch, a tributary to Little Yellow Creek downstream of Fern Lake. Stephens (1993) surveyed Davis Branch as part of an ongoing blackside dace population assessment by the National Park Service. Davis Branch is an upland (second order), cool water stream with a moderate gradient and a forested watershed that lies wholly within the boundary of the Cumberland Gap National Historical Park (CGNHP). Stephens (1993) reported that Davis Branch supported a diverse fishery community comprised of 15 species, including the blackside dace.

In comparison to previous investigations, the 1993 survey of Davis Branch indicated stable species composition and community structure. Stephens described Davis Branch as moderately silted, primarily due to bank erosion. Although erosion is evident, silt-free areas downstream of riffles were observed that are suitable for spawning by blackside dace. Consequently, a healthy blackside dace population was present throughout the length of Davis Branch, with the exception of the lowermost sampling station near the mouth. At that point, habitat requirements for the blackside dace are marginal because of increased numbers of predator species, reduced stream gradient, and reduced overstory canopy cover.

After the 1993 survey, beaver began to build dams in the upper reaches of Davis Branch. In the following years, Stephens observed that the blackside dace population in the upper reaches of Davis Branch changed significantly as a result of beaver activity (1994). The beaver ponds altered the physical structure of the habitat by increasing the temperature of the water, increasing siltation downstream, and contributing to the increase of the redbreast sunfish population, a predator of blackside dace (Stephens 1999). There was a general shift of the declining population to downstream sections of Davis Branch (Stephens 2002, 2006/2007). An additional survey during the spring of 2007, upstream of the standard sampling stations, revealed a small population of dace above the beaver ponds and has restored some hope for the blackside dace population in Davis Branch.

Kentucky Department of Environmental Protection, Division of Water/ Kentucky Division of Water Quality Studies

In addition to the previously discussed investigations by TDEC and Stephens, additional investigations have been conducted in the Yellow Creek watershed. A biological and water quality investigation of the Yellow Creek watershed was conducted by the Kentucky Department of Environmental Protection, Division of Water (KYDW) in 1988 and 1990 as part of an ongoing assessment of water quality in the Yellow Creek watershed.

Previous investigations in the Yellow Creek watershed by the Kentucky Division of Water Quality (DOWQ, 1978) and Harker, et al. (1979), indicated adverse impacts associated with coal mine runoff and municipal wastewater effluents in the Yellow Creek watershed. The principal focus of the investigation was to assess the extent of water quality improvement associated with upgrading of the Middlesboro Wastewater Treatment Plant in 1986, but the survey included sampling points throughout the Yellow Creek watershed, including Little Yellow Creek.

The 1988 and 1990 investigations by the Division of Water Quality (1978) indicated a general trend of improvement when compared to previous water quality assessments in the Yellow Creek watershed (Harker, et al., 1979). However, physiochemical and biological data indicated continued nutrient loading to Yellow Creek associated with discharges from the wastewater plant and additional adverse impacts associated with surface mining, sedimentation, and stream channelization. Analyses of physiochemical conditions and biological communities indicated moderate to slight impairment of water quality throughout most of the Yellow Creek watershed, with the exception of Little Yellow Creek and Davis Branch. KYDW concluded that only Little Yellow Creek remained unimpaired, fully supporting

designated warm water aquatic habitat use. Yellow Creek and Bennett's Fork were moderately to slightly impaired, partially supporting warm water aquatic habitat use.

U.S. Army Corps of Engineers Studies

More recently, the U.S. Army Corps of Engineers (COE) conducted additional biological investigations in the Yellow Creek watershed as part of an Environmental Assessment of proposed flood control measures in the Yellow Creek watershed in Middlesboro, Kentucky (COE, 1995). Benthic macroinvertebrate and fish communities at sampling points throughout the watershed indicated severely stressed conditions in Yellow Creek proper as the result of sediment loading and organic enrichment. The COE investigation indicated that, with the exception of a short stream reach immediately downstream of the Yellow Creek bypass, conditions in Yellow Creek had degraded since the previous investigations by the Kentucky Division of Water Quality (1978). Although biological communities in Yellow Creek proper were depressed, Little Yellow Creek below Fern Lake supported a diverse benthic macroinvertebrate community. However, only four species of fish were identified in Little Yellow Creek. The apparent reduction in the fish community in comparison with the KYDW study (15 species) was attributed to construction activities at the Cumberland Gap tunnel and associated point and non-point source discharges.

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APPENDIX G
VEGETATION TYPES
(UGA 2007)

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VEGETATION TYPES FOR CUMBERLAND GAP NATIONAL HISTORICAL PARK (UGA 2007)

Montane Cold – Deciduous Forests

7692 Appalachian Montane Oak- Hickory (Rich-Type)
White Oak – Northern Red Oak – Rock Chestnut Oak / Richweed – Mayapple/Hog Peanut Forest

Submontane Cold - Deciduous Forests

7240 Ridge and Valley Dry – Mesic White Oak Forest
White Oak – Red Oak – Shagbark Hickory / Redbud – Eastern Red Cedar Forest

7881 Central Interior Beech – White Oak Forest
American Beech - White Oak / Flowering Dogwood Forest

6192 Appalachian Montane Oak - Hickory (Red Oak type)
Northern Red Oak – Red Maple / Sweet shrub – Buffalo nut / New York Fern Forest

6271 Chestnut Oak Forest (Xeric Ridge Type)
(Rock Chestnut Oak, Scarlet Oak) / Mountain Laurel / Galax, Wintergreen) Forest

7267 Appalachian Montane Oak – Hickory Forest (Chestnut Oak type)
Rock Chestnut Oak – (Northern Red Oak) – Hickory species / Sourwood – Flowering Dogwood Forest

6286 Chestnut Oak Forest (Mesic Slope Heath Type)
Rock Chestnut Oak – Northern Red Oak / Great Rhododendron / Galax Forest

5222 Northern Mixed Mesophytic Forest
Tuliptree – Appalachian Basswood – Yellow Buckeye, Sugar Maple / Umbrella Magnolia Forest

202.602 Central Appalachian Alkaline Glade and Woodland

Ecological System that encompasses these (3) Community Types

8458 (current label but changed to 202.602) Dry Calcareous Forest / Woodland
White Ash - Shagbark Hickory / Carolina Buckthorn / Whiskered Sunflower Woodland

4793 Ridge and Valley Limestone Oak – Hickory Forest {Not Mapped, but occurs in conjunction with 8458)

Chinquapin Oak – White Oak / Redbud / Leatherwood Forest

4393 Limestone Cliff Fragrant Sumac Shrubland {not mapped, but occurs in conjunction with 8458}

Needle – Leaf Evergreen Forests

7097 Blue Ridge Table Mountain Pine - Pitch Pine Woodland (Typic Type)
Table Mountain Pine – Pitch Pine – (Rock Chestnut Oak) / Mountain Laurel – Hillside Blueberry Woodland

VEGETATION TYPES FOR CUMBERLAND GAP NATIONAL HISTORICAL PARK (CONTINUED)

3617 Hi Lewis Pitch Pine Barrens
Pitch Pine / Little Blue Stem – Yellow Indiangrass – Honesty Weed Woodland

7136 Southern Appalachian Eastern Hemlock Forest (Typic Type)
Eastern Hemlock / Great Rhododendron – (Mountain Sweet- pepperbush, Mountain Doghobble) Forest

Mixed Evergreen - Deciduous Forests

8558 Southern Appalachian Acidic Mixed Hardwood Forest
Red Maple – (Yellow Birch, Sweet Birch) – Fraser Magnolia / (Great Rhododendron, Mountain Laurel)

8407 Cumberland / Appalachian Hemlock - Hardwood Cove Forest
Eastern Hemlock – (American Beech, Appalachian Basswood) / Umbrella Magnolia Forest

Successional Forests

2591 Virginia Pine Successional Forest

7124 Eastern Red-Cedar (Oak species) Forest
Red Cedar Successional Forest

7220 Successional Tuliptree Forest (Circumneutral Type)
Tuliptree / (Redbud) / (Northern Spicebush) Forest

7221 Interior Mid to Late-Successional tuliptree – Hardwood Upland Forest (Acid Type)
Tuliptree - Oak species Forest

4096 Southern Blue Ridge Successional Sassafras Forest
Sassafras – Oak species Forest

Temporarily Flooded Cold Deciduous

7340 Sycamore – Sweetgum Piedmont Swamp Forest
Sycamore – Sweetgum / Common Pawpaw Forest

Shrublands

3814 Southern Appalachian Mountain Laurel Bald
Mountain Laurel – Catawba Rhododendron – (Black huckleberry, Mountain Fetterbush, Highbush Blueberry) Shrubland

VEGETATION TYPES FOR CUMBERLAND GAP NATIONAL HISTORICAL PARK (CONTINUED)

8470 Cumberland Sandstone Glade Heath Shrubland
Mountain Laurel – (Black Huckleberry, Box Huckleberry) Cumberland Shrubland

4732 Blackberry – Greenbrier Successional Shrubland Thicket
Southern Blackberry, Southern Dewberry – (White Greenbrier, Common Greenbrier) Shrubland

3890 Summer Grape Vine – Shrubland
Montane Grape Opening

3882 Kudzu Vine – Shrubland
Kudzu Vineland

Herbaceous

4048 Cultivated Meadow
(Tall Fescue, Meadow Fescue) Herbaceous Vegetation

Wetlands and Bogs

7771 Cumberland Stream Side Bog
Mountain Fringe Sedge – Woolgrass Bulrush – Tawny Cotton Grass – Cinnamon Fern Herbaceous Vegetation

7565 Swamp Forest - Bog Complex (Typic Type)
Eastern Hemlock – Red Maple – (Tuliptree, Blackgum) / Great Rhododendron / Peat moss species Forest

8433 Southern Blue Ridge Beaver Pond Marsh
Soft Rush – White turtle head – Bulrush species Southern Blue Ridge Beaver Pond herbaceous Vegetation

3912 Smooth Alder Saturated Southern Shrubland
Saturated Alder Thicket

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APPENDIX H
INFORMATION ON RARE, THREATENED OR ENDANGERED SPECIES IN CUMBERLAND GAP NATIONAL HISTORICAL PARK

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Key to Numeric Rank for Global Rangs (G) and State Ranks (S) for Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia

G1 = Critically imperiled globally

G2 = Imperiled globally

G3 = Rare or uncommon

G4 = Widespread, abundant, and apparently secure, but with cause for long-term concern

G5 = Demonstrably widespread, abundant and secure

G? = Unranked

GNR = Not ranked

S1 = Critically imperiled statewide

S2 = Imperiled statewide

S3 = Rare or uncommon

S4 = Widespread, abundant, and apparently secure, but with cause for long-term concern in the state

S5 = Demonstrably widespread, abundant and secure in the state

S? = Unranked

SH = State Historic

SNR = Not ranked

SNA = Exotic species

n/a = not ranked (usually because only genus was identified)

Qualifiers:

? = Inexact numeric rank

Q = Questionable taxonomy

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Acer pensylvanicum	STRIPED MAPLE	28754	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR
Acorus americanus	SWEETFLAG	182561	Pounds, Patrick, and Hinkle 1989	G5	S4	SNA	SNR
Acorus calamus	SWEETFLAG	42523	Pounds, Patrick, and Hinkle 1989	G4?	S4	SNR	SNR
Adiantum pedatum	NORTHERN MAIDENHAIR-FERN	17311	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Adlumia fungosa	CLIMBING FUMITORY	18897	Pounds, Patrick, and Hinkle 1989	G4	S1	S2	S3
Agalinis tenuifolia	SLENDER FALSE-FOXGLOVE	33036	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Ageratina aromatica	LESSER SNAKEROOT	36467	Pounds, Patrick, and Hinkle 1989	G4G5	S4	SNR	SNR
Agrimonia gryposepala	TALL HAIRY GROOVEBUR	25095	Pounds, Patrick, and Hinkle 1989	G5	S1S2	SNR	SNR
Agrostis hyemalis	WINTER BENTGRASS	40394	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Agrostis perennans	PERENIAL BENTGRASS	40423	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Alisma subcordatum	BROAD-LEAVED WATER-PLANTAIN	38895	Pounds, Patrick, and Hinkle 1989	G4G5	S4S5	SNR	SNR
Allium cernuum	NODDING ONION	42721	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Allium tricoccum	WILD LEEK	42672	Pounds, Patrick, and Hinkle 1989	G5	S4	S1S2	SNR
Amianthium muscitoxicum	FLY-POISON	42775	Pounds, Patrick, and Hinkle 1989	G4G5	S1S2	SNR	SNR
Anemone quinquefolia	WOOD ANEMONE	18448	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR
Angelica venenosa	HAIRY ANGELICA	29453	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Antennaria solitaria	SINGLE-HEAD PUSSYTOES	36756	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Aplectrum hyemale	PUTTYROOT	43489	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S4S5
Arabis canadensis	SICKLEPOD	22678	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Arabis lyrata	LYRE-LEAF ROCKCRESS	22672	NatureServe 2002/2003	G5	S3?	SNR	SNR
Aralia nudicaulis	WILD SARSAPARILLA	29376	Pounds, Patrick, and Hinkle 1989	G5	S3?	SNR	SNR
Aralia racemosa	AMERICAN SPIKENARD	29377	Pounds, Patrick, and Hinkle 1989	G4G5	S4	SNR	SNR
Arisaema dracontium	GREEN DRAGON	42529	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Aristolochia macrophylla	PIPEVINE	18336	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Aristolochia serpentaria	VIRGINIA SNAKEROOT	18342	Pounds, Patrick, and Hinkle 1989	G4	S4S5	SNR	SNR
Aruncus dioicus	COMMON GOATSBEARD	25130	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SU
Asclepias exaltata	POKE MILKWEED	30266	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Asclepias quadrifolia	WHORLED MILKWEED	30297	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Asclepias variegata	WHITE MILKWEED	30319	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Asclepias verticillata	WHORLED MILKWEED	30320	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Asclepias viridiflora	GREEN MILKWEED	30322	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Asplenium montanum	MOUNTAIN SPLEENWORT	17351	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Asplenium pinnatifidum	LOBED SPLEENWORT	17354	Pounds, Patrick, and Hinkle 1989	G4	S4	SNR	SNR
Asplenium resiliens	BLACK-STEM SPLEENWORT	17358	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Asplenium ruta-muraria	WALLRUE SPLEENWORT	192107	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Asplenium trichomanes	MAIDENHAIR SPLEENWORT	17364	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Aster acuminatus	WHORLED ASTER	35521	Pounds, Patrick, and Hinkle 1989	G5	S2S3	SNR	SNR
Aster infirmus	CORNEL-LEAF ASTER	35591	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Aster laevis var. concinnus	SMOOTH BLUE ASTER	193140	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	S3
Aster oblongifolius	AROMATIC ASTER	35615	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S4
Aster surculosus	MICHAUX'S WOOD ASTER	35662	Pounds, Patrick, and Hinkle 1989	G4G5	S5	SNR	S1
Aureolaria pedicularia	FERNLEAF YELLOW FALSE-FOXGLOVE	33489	Pounds, Patrick, and Hinkle 1989	G5	S3?	SNR	SNR
Blephilia ciliata	DOWNY WOODMINT	32460	NatureServe 2002/2003	G5	S4	SNR	SNR
Blephilia hirsuta	HAIRY WOODMINT	32461	Pounds, Patrick, and Hinkle 1988	G5?	S5?	SNR	S3
Boykinia aconitifolia	BROOK SAXIFRAGE	24314	Pounds, Patrick, and Hinkle 1989	G4	S2	SNR	SNR
Brickellia eupatorioides	FALSE BONESET	36875	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Calamagrostis porteri	PORTER'S REEDGRASS	40562	Pounds, Patrick, and Hinkle 1989	G4	S2	S1	S3S4
Callitriche heterophylla	LARGE WATER-STARWORT	32053	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Cardamine diphylla	TWO-LEAF TOOTHWORT	22792	Pounds, Patrick, and Hinkle 1989	G5	S5	S3S4	S3
Cardamine rotundifolia	ROUND-LEAF WATER CRESS	22810	Pounds, Patrick, and Hinkle 1989	G4	S3S4	S2S3	S4
Carex abscondita	THICKET SEDGE	39475	BONAP County Database	G4G5	S3S4	SNR	SNR
Carex appalachica	APPALACHIAN SEDGE	39497	NatureServe 2002/2003	G4	S2?	S1	S4
Carex atlantica ssp. atlantica	PRICKLY BOG SEDGE	523747	NatureServe 2002/2003	G5	S4?	SNR	SNR
Carex austrocaroliniana	TARHEEL SEDGE	39514	Pounds, Patrick, and Hinkle 1989	G4	S3	S2S3	SNR
Carex baileyi	BAILEY'S SEDGE	39376	Pounds, Patrick, and Hinkle 1989	G4	S4	SNR	SNR
Carex bromoides	BROMELIKE SEDGE	39380	NatureServe 2002/2003	G5	S4?	SNR	SNR
Carex careyana	CAREY'S SEDGE	39541	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	S3
Carex debilis var. pubera	WHITE EDGE SEDGE	527086	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR
Carex interior	INLAND SEDGE	39652	NatureServe 2002/2003	G5	SNR	SNR	S1
Carex laxiculmis	SPREADING SEDGE	39411	NatureServe 2002/2003	G5	S3S4	SNR	SNR
Carex laxiflora	LOOSE-FLOWERED SEDGE	39662	Pounds, Patrick, and Hinkle 1989	G5	S5	S4	SNR
Carex leptalea	BRISTLY-STALK SEDGE	39669	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Carex lucorum	BLUE RIDGE SEDGE	501241	Pounds, Patrick, and Hinkle 1989	G4	S5	SNR	S2
Carex nigromarginata	BLACK EDGE SEDGE	39719	NatureServe 2002/2003	G5	S4?	SNR	SNR
Carex normalis	GREATER STRAW SEDGE	39720	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Carex purpurifera	PURPLE SEDGE	39776	Pounds, Patrick, and Hinkle 1989	G4?	S3S4	S3	S2
Carex radiata	STELLATE SEDGE	39778	Pounds, Patrick, and Hinkle 1989	G4	S2?	SNA	SNR
Carex striatula	LINED SEDGE	39822	Pounds, Patrick, and Hinkle 1989	G4G5	S3S4	SNR	SNR
Carex styloflexa	BENT SEDGE	39823	Pounds, Patrick, and Hinkle 1989	G4G5	S3S4	SNR	SNR
Carya alba	MOCKERNUT HICKORY	501306	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Carya ovalis	RED HICKORY	19241	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Carya pallida	SAND HICKORY	19244	NatureServe 2002/2003	G5	S4	SNR	SNR
Castanea dentata	AMERICAN CHESTNUT	19454	Pounds, Patrick, and Hinkle 1989	G4	S1?	S2S3	SNR
Castanea pumila	ALLEGHENY CHINQUAPIN	19457	Pounds, Patrick, and Hinkle 1989	G5	S2	SNR	SNR
Caulophyllum thalictroides	BLUE COHOSH	18840	Pounds, Patrick, and Hinkle 1989	G4G5	S4S5	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Chamaelirium luteum	DEVIL'S-BIT	42894	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Cheilanthes alabamensis	ALABAMA LIPFERN	17434	Pounds, Patrick, and Hinkle 1989	G4G5	SH	SNR	S1
Chelone glabra	WHITE TURTLEHEAD	33182	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Chrysopsis mariana	MARYLAND GOLDEN ASTER	202495	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Cinna latifolia	SLENDER WOOD REEDGRASS	40584	Pounds, Patrick, and Hinkle 1989	G5	SNR	SNR	S3
Cirsium muticum	SWAMP THISTLE	36387	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Clematis catesbyana	SATINCURLS	18691	NatureServe 2002/2003	G4G5	SH	SNR	S1
Clematis viorna	VASE-VINE LEATHERFLOWER	18715	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Clitoria mariana	MARYLAND BUTTERFLY-PEA	26542	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Cocculus carolinus	CAROLINA CORALBEAD	18864	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S1

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Convallaria montana	AMERICAN LILY-OF-THE-VALLEY	511293	Pounds, Patrick, and Hinkle 1989	G4	S1	SNA	SNR
Corallorrhiza odontorhiza	AUTUMN CORAL-ROOT	43525	Pounds, Patrick, and Hinkle 1989. Plant list compiled by BONAP from its County Database, and converted to NPSpecies by I&M Office.	G5	S4S5	SNR	S5
Corallorrhiza wisteriana	SPRING CORALROOT	43528	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S3
Corydalis sempervirens	PALE CORYDALIS	19010	Pounds, Patrick, and Hinkle 1989	G4G5	S3?	S1S2	SNR
Crataegus calpodendron	PEAR HAWTHORN	24547	NatureServe 2002/2003	G5	S4?	SNR	S1
Crataegus uniflora	DWARF HAWTHORN	24608	NatureServe 2002/2003	G5	S3?	SNR	SNR
Croton monanthogynus	PRAIRIE TEA	28283	NatureServe 2002/2003	G5	S5	SNR	S3
Cypripedium acaule	PINK LADY'S-SLIPPER	43534	Pounds, Patrick, and Hinkle 1989	G5	S4	S4	S5
Cypripedium parviflorum	SMALL YELLOW LADY'S-SLIPPER	501943	Pounds, Patrick, and Hinkle 1989	G5	S2	SNR	SNR
Cypripedium pubescens	LARGE YELLOW LADY'S-SLIPPER	501945	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Danthonia compressa	FLATTENED OATGRASS	41637	NatureServe 2002/2003	G5	S3S4	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Dennstaedtia punctilobula	EASTERN HAY-SCENTED FERN	17491	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Deschampsia flexuosa	WAVY HAIRGRASS	40595	NatureServe 2002/2003	G5	S2	SNR	SNR
Diarrhena americana	AMERICAN BEAKGRAIN	41644	Pounds, Patrick, and Hinkle 1989	G4?	S5	SNR	S3
Diplazium pycnocarpon	GLADE FERN	502095	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Disporum maculatum	NODDING MANDRIN	42920	Pounds, Patrick, and Hinkle 1989	G5	S3?	SNR	S3
Dryopteris goldiana	GOLDIE'S WOODFERN	17537	Pounds, Patrick, and Hinkle 1989	G4	S4	SNR	SNR
Elephantopus tomentosus	TOBACCOWEED	37300	Pounds, Patrick, and Hinkle 1989	G5	S3	SNR	SNR
Elymus canadensis	NODDING WILD-RYE	40683	Pounds, Patrick, and Hinkle 1989	G5	SNR	SNR	S2?
Epilobium coloratum	PURPLE-LEAF WILLOW-HERB	27298	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Eryngium yuccifolium	RATTLESNAKE-MASTER	29506	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	S2
Eupatorium incarnatum	PINK THOROUGHWORT	502514	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S2
Euphorbia mercurialina	MERCURY SPURGE	28101	Pounds, Patrick, and Hinkle 1989	G4	S1S2	SNR	SNA

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Frangula caroliniana	CAROLINA BUCKTHORN	506986	Pounds, Patrick, and Hinkle 1989	G5	SNA	SNR	S3
Galearis spectabilis	SHOWY ORCHIS	43591	Pounds, Patrick, and Hinkle 1989	G5	S5	S4	S5
Gentiana decora	SHOWY GENTIAN	29975	Pounds, Patrick, and Hinkle 1989	G4?	S3	SNR	S3S4
Gentiana villosa	STRIPED GENTIAN	29990	Pounds, Patrick, and Hinkle 1989	G4	S4?	SNR	SNR
Geum vernum	SPRING AVENS	24664	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S3S4
Glyceria melicaria	SLENDER MANNA GRASS	40849	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR
Helianthus atrorubens	PURPLE-DISK SUNFLOWER	36620	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR
Helianthus hirsutus	STIFF-HAIR SUNFLOWER	36646	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S3
Heuchera parviflora	LITTLE-LEAVED ALUMROOT	24365	Pounds, Patrick, and Hinkle 1989	G4	S5	SNR	S3
Hexalectris spicata	CRESTED CORALROOT	43608	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	S3
Hexastylis arifolia	LITTLE BROWN JUG	502983	Pounds, Patrick, and Hinkle 1989	G5	S5	S5	S3
Hexastylis heterophylla	VARIABLE-LEAVED HEARTLEAF	502985	Pounds, Patrick, and Hinkle 1989	G4G5Q	S3S4	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Hieracium scabrum	ROUGH HAWKWEED	37727	Pounds, Patrick, and Hinkle 1989	G5	S4	S2	SNR
Hieracium venosum	RATTLESNAKE HAWKWEED	37734	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Huperzia porophila	ROCK CLUBMOSS	503084	Pounds, Patrick, and Hinkle 1989	G4	S5	SNR	S1
Hydrastis canadensis	GOLDEN-SEAL	18781	Pounds, Patrick, and Hinkle 1989	G4	S4	S3	S3
Hydrophyllum macrophyllum	LARGELEAF WATERLEAF	31393	NatureServe 2002/2003	G5	S5	S4S5	S3
Ilex ambigua	CAROLINA HOLLY	27987	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Iris cristata	CRESTED DWARF IRIS	43204	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Isotria verticillata	LARGE WHORLED POGONIA	43615	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	S5
Juglans cinerea	BUTTERNUT	19250	Pounds, Patrick, and Hinkle 1989	G3G4	S3	S3	S3?
Juncus interior	INLAND RUSH	39280	NatureServe 2002/2003	G4G5	S4?	SNR	SNR
Juncus subcaudatus	WOODS-RUSH	39316	Pounds, Patrick, and Hinkle 1989	G5	S1?	SNR	SNR
Krigia biflora	TWO-FLOWERED DWARF DANDELION	37810	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S4
Krigia virginica	DWARF DANDELION	37816	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Kyllinga brevifolioides	PASTURE FLATSEDGE	515529	Pounds, Patrick, and Hinkle 1989	GNR	S3?	SNA	SNA
Lactuca canadensis	CANADA LETTUCE	36596	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Lathyrus venosus	SMOOTH VEINY PEAVINE	25886	Pounds, Patrick, and Hinkle 1989	G5	S2S3	SNR	SNR
Lemna minor	LESSER DUCKWEED	42590	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Lespedeza frutescens	WAND BUSH-CLOVER	575841	NatureServe 2002/2003	G5	S4S5	SNR	SNR
Lespedeza intermedia	WAND BUSH-CLOVER	25903	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Lespedeza procumbens	TRAILING BUSH-CLOVER	25907	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Lespedeza repens	CREEPING BUSH-CLOVER	503402	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Liatris aspera	TALL GAY-FEATHER	37909	Pounds, Patrick, and Hinkle 1989	G4G5	S3S4	SNR	S3
Ligusticum canadense	LOVAGE	29528	Pounds, Patrick, and Hinkle 1989	G4	S4	SNR	SNR
Lilium canadense	CANADA LILY	42732	NatureServe 2002/2003	G5	S4?	S3	SNR
Linum virginianum	VIRGINIA FLAX	29202	Pounds, Patrick, and Hinkle 1989	G4G5	S4S5	SNR	SNR
Liparis liliifolia	LARGE TWAYBLADE	43622	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	S5

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Lithospermum canescens	HOARY PUCCOON	31945	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Lithospermum latifolium	AMERICAN GROMWELL	31949	Pounds, Patrick, and Hinkle 1989	G4	S4?	SNR	S3
Lobelia puberula	DOWNY LOBELIA	34529	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Lobelia spicata	PALE-SPIKED LOBELIA	34532	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Lonicera dioica	LIMBER HONEYSUCKLE	35290	NatureServe 2002/2003	G5	S4	S2	SNR
Luzula bulbosa	SOUTHERN WOODRUSH	39338	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Luzula echinata	WOOD RUSH	39342	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Lycopodium clavatum	RUNNING CLUBMOSS	17024	NatureServe 2002/2003	G5	S1?	SNR	SNR
Lycopodium obscurum	TREE CLUBMOSS	17032	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Lycopodium tristachyum	DEEP-ROOT CLUBMOSS	17037	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Lygodium palmatum	CLIMBING FERN	17985	Pounds, Patrick, and Hinkle 1989	G4	S5	SNR	S3
Lysimachia tonsa	SOUTHERN LOOSESTRIFE	24001	Pounds, Patrick, and Hinkle 1989	G4	S4	S2S3	S4
Magnolia macrophylla	BIGLEAF MAGNOLIA	18075	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S1

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Maianthemum canadense	FALSE LILY-OF-THE-VALLEY	503653	Pounds, Patrick, and Hinkle 1989	G5	S2	SNR	SNR
Malaxis unifolia	GREEN ADDER'S-MOUTH	43647	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	S5
Malus angustifolia	SOUTHERN CRABAPPLE	25255	Pounds, Patrick, and Hinkle 1989	G5?	S3S4	SNR	SNR
Melampyrum lineare	AMERICAN COW-WHEAT	33651	Pounds, Patrick, and Hinkle 1989	G5	S2	SNR	SNR
Minuartia glabra	APPALACHIAN SANDWORT	19995	Pounds, Patrick, and Hinkle 1989	G4	S1S2	S3	SNR
Muhlenbergia frondosa	WIRESTEM MUHLY	41915	NatureServe 2002/2003	G5	S4S5	SNR	SNR
Myosotis macrosperma	LARGESEED FORGET-ME-NOT	31695	NatureServe 2002/2003	G5	S4S5	SNR	SNR
Ophioglossum pycnostichum	ADDERS TONGUE	517792	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Orobanche uniflora	ONE-FLOWERED BROOMRAPE	34300	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Osmunda claytoniana	INTERRUPTED FERN	17220	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Oxalis montana	WHITE WOOD-SORREL	29090	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Oxypolis rigidior	STIFF COWBANE	29544	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Panax quinquefolius	AMERICAN GINSENG	29399	Pounds, Patrick, and Hinkle 1989	G4	S5	S3S4	S3S4

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Panicum anceps	BEAKED PANIC GRASS	40904	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Panicum dichotomiflorum	FALL PANIC GRASS	40908	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Paronychia argyrocoma	SILVERY NAILWORT	20321	Pounds, Patrick, and Hinkle 1989	G4	S1	S1S2	S4
Paronychia canadensis	FORKED NAILWORT	20325	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Paspalum pubiflorum	HAIRY-SEED PASPALUM	40994	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Pellaea atropurpurea	PURPLE-STEM CLIFF-BRAKE	17641	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Phacelia bipinnatifida	FERNLEAF PHACELIA	31459	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S3
Phacelia purshii	MIAMI-MIST	504279	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S3
Phaseolus polystachios	WILD KIDNEY BEAN	504291	Pounds, Patrick, and Hinkle 1989	G4	S4S5	SNR	SNR
Philadelphus hirsutus	STREAMBANK MOCK-ORANGE	24427	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	S3
Phlox amplifolia	LARGE-LEAVED PHLOX	30911	Pounds, Patrick, and Hinkle 1989	G3G5	S4S5	SNR	S2
Photinia melanocarpa	BLACK CHOKEBERRY	565397	NatureServe 2002/2003	G5	S4S5	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Pinus rigida	PITCH PINE	183376	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Platanthera ciliaris	YELLOW FRINGED ORCHID	43413	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	S3S4
Platanthera clavellata	SMALL GREEN WOODLAND ORCHID	43423	Pounds, Patrick, and Hinkle 1989	G5	S4	S4?	S5
Platanthera flava	PALE GREEN ORCHID	43414	Pounds, Patrick, and Hinkle 1989	G4	S4?	SNR	S3
Platanthera lacera	GREEN FRINGED ORCHID	43430	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	S3S4
Pleopeltis polypodioides	RESURRECTION FERN	504451	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Poa alsodes	GROVE BLUEGRASS	41104	NatureServe 2002/2003	G4G5	S4S5	SNR	S3
Polygala senega	SENECA SNAKEROOT	29316	Pounds, Patrick, and Hinkle 1989	G4G5	S4?	SNR	SNR
Polygonum arifolium	HALBERD-LEAF TEARTHUMB	20849	Pounds, Patrick, and Hinkle 1989	G5	S4?	S1	SNR
Polypodium virginianum	ROCK POLYPODY	17242	Pounds, Patrick, and Hinkle 1989	G5	S5	S4S5	SNR
Porteranthus trifoliatus	BOWMAN'S-ROOT	25285	Pounds, Patrick, and Hinkle 1989	G4G5	S4?	SNR	SNR
Potentilla norvegica	NORWEGIAN CINQUEFOIL	24730	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Ranunculus allegheniensis	ALLEGHENY MOUNTAIN BUTTERCUP	18586	NatureServe 2002/2003	G4G5	S3S4	S1	SNR
Rhododendron catawbiense	CATAWBA RHODODENDRON	23714	Pounds, Patrick, and Hinkle 1989	G5	S2S3	SNR	SNR
Rhododendron cumberlandense	CUMBERLAND RHODODENDRON	504750	Pounds, Patrick, and Hinkle 1989	G4?	SNR	S3	S3
Rhododendron minus	CAROLINA RHODODENDRON	23722	NatureServe 2002/2003	G4	SNA	S2	SNR
Rhododendron prinophyllum	EARLY AZALEA	23727	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR
Robinia hispida var. rosea	BRISTLY LOCUST	530084	BONAP County Database	G4	S2S3	SNR	SNR
Rosa setigera	PRAIRIE ROSE	24839	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S1
Rosa virginiana	VIRGINIA ROSE	24810	Pounds, Patrick, and Hinkle 1989	G5	SNA	SH	S3
Rubus odoratus	PURPLE FLOWERING RASPBERRY	24997	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR
Rudbeckia fulgida	ORANGE CONEFLOWER	36770	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Ruellia purshiana	PURSH'S WILD-PETUNIA	34388	Pounds, Patrick, and Hinkle 1989	G5	SNR	S1S2	SNR
Salix humilis	TALL PRAIRIE WILLOW	22546	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Salvia urticifolia	NETTLE-LEAF SAGE	32750	Pounds, Patrick, and Hinkle 1989	G5	S1	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Saxifraga michauxii	MICHAUX'S SAXIFRAGE	24284	Pounds, Patrick, and Hinkle 1989	G4G5	S2	SNR	SNR
Scirpus polyphyllus	LEAFY BULRUSH	40274	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Scutellaria incana	HOARY SKULLCAP	32770	NatureServe 2002/2003	G5	S5?	SNR	S2
Scutellaria serrata	SHOWY SKULLCAP	32778	Pounds, Patrick, and Hinkle 1989	G4G5	S3?	SNR	SNR
Senecio aureus	GOLDEN RAGWORT	36091	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Senecio smallii	SMALL'S RAGWORT	518137	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Silene ovata	OVATE CATCHFLY	20100	Pounds, Patrick, and Hinkle 1989	G2G3	S1	S2	S1
Silene rotundifolia	ROUNDLEAF CATCHFLY	20114	Pounds, Patrick, and Hinkle 1989	G4	S5	SNR	S2
Silphium terebinthinaceum	PRAIRIE ROSINWEED	38411	Pounds, Patrick, and Hinkle 1988	G4G5	S4?	S1	S2
Silphium trifoliatum	THREE-LEAVED ROSINWEED	505235	Pounds, Patrick, and Hinkle 1989	G4?	S5	S3S4	SNR
Sisyrinchium albidum	WHITE BLUE-EYED GRASS	43241	NatureServe 2002/2003	G5?	S5	SNR	S2
Smilax hugeri	HUGER'S CARRION-FLOWER	505254	Pounds, Patrick, and Hinkle 1989	G4	S4S5	SNR	SNA
Smilax pulverulenta	DOWNY CARRION-FLOWER	505257	Pounds, Patrick, and Hinkle 1989	G4G5	S4?	SNR	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Solidago curtisii	CURTIS' GOLDENROD	36242	Pounds, Patrick, and Hinkle 1989	G4G5Q	S2S3	S4	SNR
Solidago flaccidifolia	APPALACHIAN GOLDEN-ROD	36255	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SU
Solidago patula	ROUNDLEAF GOLDENROD	36288	Pounds, Patrick, and Hinkle 1989	G5	SNR	SNR	S3S4
Solidago rigida var. rigida	STIFF GOLDENROD	524709	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	S2
Solidago roanensis	ROAN MOUNTAIN GOLDENROD	36298	Pounds, Patrick, and Hinkle 1989	G4G5	S1S2	SNR	SNR
Solidago rugosa ssp. rugosa var. rugosa	ROUGH-LEAF GOLDENROD	531821	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Solidago sphacelata	AUTUMN GOLDENROD	36312	Pounds, Patrick, and Hinkle 1989	G4G5	S4	S4	SNR
Sphenopholis nitida	SHINY WEDGE GRASS	41281	Pounds, Patrick, and Hinkle 1989	G5	S4S5	SNR	SNR
Spiranthes ovalis	LESSER LADIES'-TRESSES	43451	Pounds, Patrick, and Hinkle 1989	G5	S4S5	S3	SNR
Tradescantia subaspera	ZIGZAG SPIDERWORT	39176	NatureServe 2002/2003	G5	S5?	SNR	S3
Trillium grandiflorum	LARGE-FLOWERED WAKEROBIN	43074	Pounds, Patrick, and Hinkle 1989	G5	S4	SNR	SNR
Trillium sulcatum	FURROWED WAKEROBIN	505594	Pounds, Patrick, and Hinkle 1989	G4	S5	S3	SNR

Documented Plant Species of Concern for Cumberland National Historical Park Ordered Alphabetically by Scientific Name, Ranking, and Status According to Natureserve and the States of Kentucky, Tennessee, and Virginia (Continued)

Latin Name	CommonName	TSN #	Data Source	Rank	Rank KY	Rank TN	Rank VA
Trillium undulatum	PAINTED TRILLIUM	43092	Pounds, Patrick, and Hinkle 1989	G5	S2	SNR	SNR
Triosteum aurantiacum	HORSE-GENTIAN	505596	Pounds, Patrick, and Hinkle 1989	G5	S5?	SNR	S3
Vaccinium erythrocarpum	SOUTHERN MOUNTAIN CRANBERRY	23593	Pounds, Patrick, and Hinkle 1989	G5	S1?	SNR	SNR
Verbesina virginica var. virginica	WHITE CROWNBEARD	530792	NatureServe 2002/2003	G5	SNR	SNR	S3
Viburnum rufidulum	RUSTY BLACKHAW	35274	Pounds, Patrick, and Hinkle 1989	G5	S5	SNR	S3
Viola affinis	SAND VIOLET	22035	Pounds, Patrick, and Hinkle 1989	G5	SNR	SNR	S4
Viola rotundifolia	ROUNDLEAF VIOLET	22159	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR
Viola sagittata	ARROW-LEAVED VIOLET	22162	Pounds, Patrick, and Hinkle 1989	G5	S3?	SNR	SNR
Vitis cinerea	PIGEON GRAPE	28615	Pounds, Patrick, and Hinkle 1989	G4G5	S4?	SNR	SNR
Waldsteinia fragarioides	BARREN STRAWBERRY	505735	Pounds, Patrick, and Hinkle 1989	G5	S3S4	SNR	SNR
Woodwardia areolata	NETTED CHAINFERN	17749	Pounds, Patrick, and Hinkle 1989	G5	S4?	SNR	SNR

STATE, FEDERAL AND NATURAL HERITAGE PROGRAM STATUS OF MAMMALS REPORTED FROM CUMBERLAND GAP NATIONAL HISTORICAL PARK[1,2,3,4,5]				
Common Name	**Scientific Name**	**Natural Heritage Program Status[1]**	**State Status[2] / Rank**	**Federal Status[3]**
Allegheny woodrat	*Neotoma magister*	G3/G4	-	SOC
Black bear	*Ursus americanus*	G5	KY: S	PS
Eastern small-footed myotis	*Myotis leibii*	G3	KY: T TN: D/S2S3	SOC
Eastern spotted skunk	*Spilogale putorius*	G5	KY: S TN: S3	-
Eastern woodrat	*Neotoma floridana*	G5	TN:D/S3	-
Gray bat	*Myotis grisescens*	G3	KY: T TN: E/S2 VA: SE	E
Hoary bat	*Lasiurus cinereus*	G5	-	PS
Indiana bat	*Myotis sodalis*	G2/LE	KY: E TN: E/S1 VA: SE	E
Keen's Myotis	*Myotis keenii*	G2G3	-	-
Kentucky Red-backed vole	*Clethrionomys gapperi maurus*	G5T3T4	KY: S	-
Northern myotis	*Myotis septentrionalis*	G4	-	-
Pygmy shrew	*Sorex hoyi*	G5	TN: S2	-
Smoky shrew	*Sorex fumeus*	G5	TN: D/S4	-
Southern bog Lemming	*Synaptomys cooperi*	G5	TN: D/S4	-
Woodland Jumping Mouse	*Napaeozapus insignis*	G5	TN: D/S4	-

- Indicatees species has no status

[1] List of species observed in park from Barbour et al. (1979)

[2] Natural Hertitage Program Status Information from NatureServe (2007)

[3] State lists of protected species obtained from:

KYDFW (2007): http://www.kdfwr.state.ky.us/kfwis/speciesInfo/speciesInfo.asp?lid=562&NavPath=C267
VDGIF (2007): http://www.dgif.virginia.gov/wildlife/virginiatescspecies.pdf); and
TNDEC (2007): (http://www.state.tn.us/environment/na/nhp.shtml)

[4] Status of Federally-listed species obtained from

USFWS (2007)(http://www.fws.gov/endangered/)

[5] Ranking definitions for state, federal and NHP lists:

State Ranking Definitions

KY:

E – endangered; T - threatened; S - special concern; H - historic X – extirpated; N or Blank - none
Note – the Cave Management Plan states that the Gray Bat (Myotis grisescens) may occur in the park, but Barbour et al. (1979) did not list this species as being present. The State of Kentucky records show this species present in Bell County in the Varilla quadrangle. This species is listed as E by the USFWS and T by the State of Kentucky and has therefore been added to this table.

TN:

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SE#	Exotic numeric (e.g. the Asian clam *Corbicula fluminea* would be SE5)
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T# Infraspecific Taxon (trinomial)—The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank.
PS - Implied Status under the U.S. Endangered Species Act (databases do not always match)

STATE, FEDERAL AND NATURAL HERITAGE PROGRAM STATUS OF BIRDS REPORTED FROM CUMBERLAND GAP NATIONAL HISTORICAL PARK[1,2,3,4,5]				
Common Name	**Scientific Name**	**Natural Heritage Program Status[1]**	**State Status / Rank[2]**	**Federal Status[3]**
Bald eagle	*Haliaeetus leucocephalus*	G5	KY: T TN: D/S3 VA: ST	Delisted / Monitored
Blackburnian warbler	*Dendroica fusca*	G5	KY: T	-
Brown creeper	*Certhia americana*	G5	KY: E VA: SSC	-
Canada Warbler	*Wilsonia canadensis*	G5	KY: S	-
Cerulean warbler	*Dendroica cerulea*	G4	TN: D/S3B	SOC
Common raven	*Corvus corax*	G5	KY: T TN: T/S2	-
Connecticut warbler	*Oporornis agilis*	G4	-	-
Dark-eyed junco	*Junco hyemalis*	G5	KY: S	-
Golden eagle	*Aquila chrysaetos*	G5	TN: T/S1	-
Golden-crowned kinglet	*Regulus satrapa*	G5	VA: SSC	-
Golden-winged warbler	*Vermivora chrysoptera*	G5	KY: T VA: SSC	-
Great blue herron	*Ardea herodias*	G5	KY: S	-
Hermit thrush	*Catharus guttatus*	G5	VA: SSC	-
Least flycatcher	*Empidonax minimus*	G5	KY: E	-
Magnolia warbler	*Dendroica magnolia*	G5	VA: SSC	-
Mourning warbler	*Oporornis philadelphia*	G5	VA: SSC	-
Northern harrier	*Circus cyaneus*	G5	KY: T TN: D/S4N VA: SSC	-
Northern saw-whet owl	*Aegolius acadicus*	G5/PS[5]	TN: T/S1 VA: SSC	-
Olive-sided flycatcher	*Contopus cooperi*	G4	TN: D/S1	-
Osprey	*Pandion haliaetus*	G5	KY: T	

STATE, FEDERAL AND NATURAL HERITAGE PROGRAM STATUS OF BIRDS REPORTED FROM CUMBERLAND GAP NATIONAL HISTORICAL PARK[1,2,3,4,5] (Continued)				
Common Name	**Scientific Name**	**Natural Heritage Program Status[1]**	**State Status / Rank[2]**	**Federal Status[3]**
Peregrine Falcon	*Falco peregrinus*	G4/PS[5] LE	KY: Delisted – (formerly endangered) TN: E/S1N VA: ST	Delisted
Purple Finch	*Carpodacus purpureus*	G5	VA: SSC	-
Red-breasted nuthatch	*Sitta Canadensis*	G5	KY: E VA: SSC	-
Red-cockaded woodpecker	*Picoides borealis*	G3/LE	-	E
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	G5	KY: S	-
Sharp-shinned Hawk	*Accipiter striatus*	G5/PS[5]	KY: S TN:D/S3B	PS
Swainson's warbler	*Limnothlypis swainsonii*	G4	TN: D/S3	-
Yellow-bellied Sapsucker	*Sphyrapicus varius*	G5	TN: D/S1B, S4N	-

- Indicatees species has no status

[1] List of species observed in park from Barbour et al. (1979)

[2] Natural Hertitage Program Status Information from NatureServe (2007)

[3] State lists of protected species obtained from:
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D- Deemed in need of management: Any species or subspecies of nongame wildlife which the executive directore of the TWRA believes should be investigated in order to develop information relating to populations, distribution, habitat needs, limiting factors, and other biological and ecological data to determine management measures necessary for their continued ability to sustain themselves successfully. This category is analogous to "Special Concern."

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FE=Federal Endangered; FT=Federal Threatened; S/A=Similarity of Appearance; FC=Federal Candidate; SOC=Federal Species of Concern (not a legal status; list maintained by USFWS Virginia Field Office); SE=State Endangered; ST=State Threatened; SSC=State Special Concern (not a legal status).

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STATE, FEDERAL AND NATURAL HERITAGE PROGRAM STATUS OF AMPHIBIANS AND REPTILES REPORTED FROM CUMBERLAND GAP NATIONAL HISTORICAL PARK[1,2,3,4,5]

Common Name	Scientific Name	Natural Heritage Program Status[1]	State Status[2] / Rank	Federal Status[3]
Black Mountain Salamander	*Desmognathus welteri*	G4	TN: D/S3	-
Cumberland Plateau Salamander	*Plethodon kentucki*	G4	-	-
Four-Toed Salamander	*Hemidactylium scutatum*	G5	TN: D/S3	-
Green Frog	*Rana clamitans melanota*	G5T5	KY: S	-
Green Salamander	*Aneides aeneus*	G3G4	-	-
Timber Rattlesnake	*Crotalus horridus*	G4	-	-

- Indicatees species has no status

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Common Name	**Scientific Name**	**Natural Heritage Program Status[1]**	**State Status[2] / Rank**	**Federal Status[3]**
Blackside dace	*Phoxinus cumberlandensis Starnes and Starnes*	G2/LT	KY: T TN: T/S2 VA: ST	T
Brook silverside	*Labidesthes sicculus (Cope)*	G5	VA: SSC	-
Silverjaw minnow	*Ericymba buccata Cope*	G5	TN: T/S1	-

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APPENDIX I
LIST OF PROJECTS AND ACTIONS THAT COULD POTENTIALLY AFFECT THE PARK

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LIST OF PROJECTS AND ACTIONS THAT COULD POTENTIALLY AFFECT THE PARK

PAST

- Little Yellow Creek dammed in the 1880's to become Fern Lake, Middlesboro water supply
- Fern Lake watershed declared unsuitable for coal mining (Federal Register: September 23, 1996)
- Wilderness Road preservation project
- Construction of Daniel Boone Visitor Contact Center in October 2004
- Hensley Settlement restoration
- Civic Park
- Rehabilitation of main visitor center
- Campground improvements
- Restoration of Gap Cave
- Bearproof facilities for backcountry campsites
- Other area parks (Wilderness Road State Park, Pine Mountain State Park, Natural Tunnel State Park)
- Middlesboro – Bell County Airport

PRESENT (ONGOING)

- Glacier Girl relocated from Middlesboro Airport
- Multi-laning of U.S. 25E between I-81 and I-75.

FUTURE

- Bartlett Park improvement (new picnic shelters, etc)
- T.J. Asher Industrial Park and airport
- Whitmer Industrial Park
- Bell County Technology and Training Park
- Lee County Industrial Park
- Pine Mountain Historical Trail

PAST ACTIONS

Little Yellow Creek dammed in the 1880's to become Fern Lake

Alexander Alan Arthur, the Scottish born Canadian who founded the community of Middlesboro, constructed the dam on Little Yellow Creek in the early 1890's to create Fern Lake. The purpose of the

lake was to provide water for the city of Middlesboro. Middlesboro was a planned industrial center that was intended to serve as a leading steel manufacturing city using the coal and raw materials of the area. However, this effort failed in the early1890's due to economic problems and low quality raw materials.

Fern Lake watershed declared unsuitable for coal mining (Federal Register: September 23, 1996)

The Director of the Office of Surface Mining Reclamation and Enforcement reached a decision that 3,780 acres of land in the Fern Lake watershed was unsuitable for coal mining operations, for the following reasons: (1) Surface coal mining operations would affect fragile lands and could result in significant damage to important scientific or esthetic values or natural systems; (2) surface coal mining operations would affect land in which the surface coal mining operations could result in a substantial loss or reduction in the long-range availability of water supplies; (3) surface coal mining operations would be incompatible with the local land use plans of the Cumberland Gap National Historic Park; and (4) surface coal mining operations should not be allowed because the area constitutes a natural hazard land.

Wilderness Road preservation project

This project includes the U.S. 25E tunnel under Cumberland Gap, as well as the restoration of the gap to historic conditions. The 4,600 foot long twin-bore tunnel opened to traffic in 1996. The tunnel performed two functions. First, it replaced a section of U.S. 25E that followed the historic Wilderness Road through Cumberland Gap. This narrow, winding 2.3 mile section of roadway was known as "Massacre Mountain" due to the relatively high number of fatal accidents that occurred in this area. Second, the tunnel allowed the section of U.S. 25E through the gap to be removed and the gap restored to historic conditions.

Construction of Daniel Boone Visitor Information Center in 2004.

The Daniel Boone Visitor Information Center is located just off Highway 58 near the town of Cumberland Gap, Tennessee. This information center contains restrooms, a ranger station, and exhibits. An outdoor pavilion features the sights and sounds of early travelers and pioneers. Tickets for Gap Cave tours can be purchased at this location and information regarding features of the Cumberland Gap National Historical Park is also available. It is the location of the trailhead for the Wilderness Road and the meeting place for Gap Cave tours. This center is not manned, but park personnel meet with visitors at the center to initiate the Gap Cave tours.

Hensley Settlement restoration

The Hensley Settlement is pioneer community that was populated until the 1950's. Two families, the Hensleys and the Givens, originated this settlement in 1904 on an isolated plateau of the Cumberland Mountains. Within 40 years, the settlement had grown to 12 families with a population of 120 persons living on 500 acres. By 1951, the last settler had left Hensley Settlement. The National Park Service took possession of the settlement in 1955. The Job Corp program began restoration of the facilities at the settlement in the early 1960's. The park has maintained the facilities and the property since the restoration was completed. While additional staff have been requested to assist in providing interpretive tours at the settlement, existing staff are currently utilized to provide the tours.

Civic Park renovation (new picnic facilities and restrooms -2005)

Civic Park, located at the southeast corner of the park near Ewing, Virginia, is a picnic area and parking facility for the Ewing Trail, the shortest trail accessing the White Rocks area. After a new long term lease

agreement was signed, Civic Park was renovated in 2005 with a reconstructed entrance road, new picnic facilities, grills, and new restroom facilities. The pavilion is currently being repaired (2007).

Rehabilitation of main visitor center

The Cumberland Gap National Historical Park Visitor Center is located on U.S. 25E on the south side of Middlesboro, Kentucky. Approximately 65 percent of this visitor center was renovated in 2002, including the main lobby, the exhibit area, the theater, and the craft shop. A new roof was installed, along with a new heating, ventilation, and air conditioning system. No additional staff were required as a result of the renovation. The visitor center houses a museum with interactive exhibits, book sales outlet, auditorium with 2 high definition films, and Cumberland Crafts which showcases handmade crafts from the region. The visitor center is fully accessible with designated parking and an elevator.

Wilderness Road Campground improvements (new restroom)

The Wilderness Road Campground is located approximately 3 miles from the park visitor center near Highway 58 in Virginia. It has 160 sites in a beautiful wooded setting. Electrical hookups (30 and 50 amp) are available at 41 of the sites. Hot showers and potable water are located in the comfort stations. A dump station is located near the campground entrance. Since 2004, the recreational vehicle sites have been re-wired, two of the restrooms were renovated, and the amphitheater was renovated. Volunteer campground hosts assist with interpretation and light maintenance at the campground.

Restoration of Gap Cave

Gap Cave was first documented by Dr. Thomas Walker in 1750. The cave was a source of fresh water in Dr. Walker's days and continues to supply water to various entities today. The cave has had various owners. The cave was fitted with electrical lights in 1934 and was ultimately subject to graffiti and vandalism until the National Park Service took ownership of the cave in 1992. In conjunction with restoration of the gap, park staff and members of the Pine Mountain Grotto rehabilitated the cave. Old handrails, rock monuments, some of the asphalt trail, and the electric lighting system were all removed. The cave now closely resembles its original condition with only lanterns lighting the way. Gap Cave was reopened to the public for tours in 2000. Cave tours are conducted by part time students or existing seasonal staff.

Bearproof facilities for backcountry campsites

Cable and pulley systems have recently been installed in backcountry campsites to keep black bears away from campers' food. The system allows campers to store their food about 10 feet off the ground and 4 feet from the tree. The five backcountry campsites are along Ridge Trail near Hensley Settlement, Gibson Gap, and White Rocks. The park has a small, but growing black bear population. Two female and two male bears are known to populate the park, as well as about a dozen bears that are believed to migrate through the park on occasion. The purpose of the bearproofing is for the bears to not associate food with people. There were 2 incidents with black bears during 2006 near Hensley Settlement (Knoxville News Sentinel, 2007).

Other area parks

There are several other parks near Cumberland Gap National Historical Park that may help to attract visitors to the area. Wilderness Road State Park is one of Virginia's newest state parks and is located on U.S. 58 west of Ewing, Virginia, just 2 miles south of the eastern portion of Cumberland Gap National

Historical Park. The park contains approximately 200 acres for picnicking, hiking and living history programs. Visitors can enjoy the reconstructed Martin's Station, an outdoor living history museum depicting life on Virginia's 1775 frontier. The late 1870s mansion is available for weddings, meetings and other special functions. The Wilderness Road Trail links the park with Cumberland Gap National Historical Park. Pine Mountain State Park is Kentucky's first state park. It is located near Pineville, approximately 15 miles north of Cumberland Gap National Historical Park. Pine Mountain State Park offers lodging, dining, camping, group meeting facilities, an 18 hole championship golf course, hiking, boating and swimming, and other activities. Natural Tunnel State Park is located in southwestern Virginia, approximately 50 miles east of Cumberland Gap National Historical Park. Sometimes called the "Eighth Wonder of the World," the natural bridge has been attracting sightseers to the area for over 100 years. The park also offers swimming, camping, picnicking, hiking, a visitor center, an amphitheater, and interpretive programs.

Bartlett Park improvement

Visitors to Cumberland Gap National Historical Park utilize the Bartlett Park day use area for picnicking. School groups pursuing outdoor classroom opportunities and specialized study also use Bartlett Park. In addition to several picnic tables, there is currently one covered picnic shelter. Increased use of Bartlett Park has strained present resources and resulted in facilities that are frequently filled. Inclement weather results in difficult learning situations for school groups who must schedule their activities well in advance. The park proposes to expand and improve visitor accommodation in the Bartlett Park day use area by doubling the picnic shelter capacity, adding parking space, and by hardening paths to make them compliant with Americans with Disabilities Act standards for accessible design.

Middlesboro Bell County Airport

The Midlesboro Bell County Airport offers a variety of services including 24 hour, 7 days a week self service fuel, mechanics, aircraft hanger storage, aviation weather services, flight instruction, courtesy car, and a 3650 foot asphalt runway with taxiway and apron area (Commonwealth of Kentucky 2007).

PRESENT (ONGOING) ACTIONS

Glacier Girl relocated from Middlesboro Airport

Glacier Girl is a World War II P-38 Lightning aircraft that was left in Greenland during a failed mission to Great Britain in 1942. Over the years, Glacier Girl became buried under nearly 300 feet of ice. Fifty years later, Glacier Girl was recovered by Roy Shoffner, restored, and made available for public display at the Lost Squadron Museum located at the Middlesboro-Bell County Airport. The aircraft was sold to another interest in March 2007 which moved the plane to San Antonio, Texas temporarily. Glacier Girl returned to Middlesboro for several days in June 2007 on her way to the Great Britain, the location of her original mission.

Multi-laning of U.S. 25E between I-81 and I-75.

U.S. 25E between I-81 near Morristown, Tennessee and I-75 near Corbin, Kentucky has always attracted motorists looking for a "short cut" between those areas. This section of U.S. 25E is nearly 100 miles long, but saves truck drivers and other long distance travelers nearly 30 miles over using I-75 and I-81/I-40 between Corbin and Morristown. The grades are also less severe and allow heavy trucks to avoid the 5 percent grade on I-75 at Jellico Mountain, near the Tennessee – Kentucky state line. As the roadway has been constructed as a four lane divided facility in Kentucky and Tennessee (except for an eight mile

section in southern Claiborne County that is under construction and projected to be completed by late 2007), the "short cut" may save time as well as mileage.

FUTURE ACTIONS

T.J. Asher Industrial Park and airport

The T.J. Asher Industrial Park is under construction in eastern Bell County near the Harlan County line. The 500 acre site, a reclaimed mountaintop removal coal mine, is designed to accommodate an airport on an adjacent 250 acres. Officials hope to attract a major distribution company to the industrial park. The industrial park is planned to bring new jobs into the region.

Whitmer Industrial Park

Whitmer Industrial Park is located in Middlesboro on South 17th Street approximately 1 mile from U.S. 25E. The park contains 7 tracts totaling 28 acres. A manufacturing firm constructed 2 buildings on the first site in 2006.

Bell County Technology and Training Park

The Bell County Technology and Training Park is located adjacent to the Southeast Kentucky Community and Technical College near the Middlesboro-Bell County Airport in western Middlesboro. The 8.4 acre park is owned by the Bell County Industrial Foundation.

Lee County Industrial Park

The Lee County Industrial Park is located to the east of Jonesville on U.S. 58 at Virginia State Road 638. The 50 acre site has several businesses currently located on the property.

Pine Mountain Historical Trail

The Pine Mountain Historical Trail was envisioned as a way to showcase the geology, history, and scenery of the central Appalachian Mountains. Once complete, the trail will be 120 miles long and will link Breaks Interstate Park with Cumberland Gap National Historical Park. The trail will cross terrain containing pioneer homesteads, waterfalls, cliffs, caves, and scenic overlooks. Currently, 28 miles of the trail are open to hikers.

Composting toilet at Fern Lake

A composting toilet will be constructed and operated at Fern Lake to accommodate visitors to this area.

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APPENDIX J
AGENCY COORDINATION

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Stakeholder Coordination

The following is an example of the scoping letter sent to stakeholders during the 2004 scoping period as described in Chapter 6 of this document.

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United States Department of the Interior

NATIONAL PARK SERVICE
Cumberland Gap National Historical Park
US 25E South
P. O. Box 1848
Middlesboro, KY 40965-1848
(606) 248-2817

IN REPLY REFER TO:

D-18

July 22, 2004

Mr. Tom Shattuck, Chairman
Bell County Tourism
2215 Cumberland Avenue
Middlesboro, KY 40965

Dear Mr. Shattuck:

In accordance with the National Environmental Policy Act of 1969 (Public Law 91-190, as amended), the National Park Service is preparing a General Management Plan and Environmental Impact Statement for Cumberland Gap National Historical Park. The purpose of this letter is to request your comments regarding the General Management Plan/Environmental Impact Statement, identify issues of concern that you might have, and solicit your input on the future management direction for the park. You are invited to attend a stakeholder meeting to be held August 10, 2004 at the Ramada Inn, Cumberland Gap, TN. The meeting is scheduled to begin at 9:00 a.m. and will conclude by 11:00 a.m. You may also submit comments by mail or telephone to:

Mr. Mark H. Woods, Superintendent
Cumberland Gap National Historical Park
US 25E South
P.O. Box 1848
Middlesboro, KY 40965-1848
(606) 248-2817
Cuga_Superintendent@nps.gov

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Submitting comments will ensure that you are included on the mailing list for further information. If you do not wish to comment at this time, but want to remain on the mailing list, you must notify the planning team at the address listed above. Although your comments are always welcome, comments received by **September 10, 2004**, are requested.

The Purpose and Need: The purpose of the Cumberland Gap National Historical Park is to preserve and protect the historic Cumberland Gap, including the Warrior's Path of the American Indian and the pioneer Wilderness Road, and to preserve and interpret its scenic, geological, cultural, natural, and historic resources for the enjoyment, benefit and inspiration of present and future generations. The National Parks and

Recreation Act of 1978, Public Law 95-625, requires the National Park Service to prepare a General Management Plan for every area that it administers. The current plan for Cumberland Gap National Historical Park was completed in 1979 and is now outdated to address current and future management needs. There is a clear need to update the General Management Plan for Cumberland Gap National Historical Park in order to provide essential guidance and direction for attaining desired future conditions, visitor experiences, and operational principles.

National Park Service managers constantly make difficult decisions about ways to preserve significant natural and cultural resources for public enjoyment, about competing demands for limited resources, about priorities for using available funds and staff, and about differing interests and views of what is most important. The General Management Plan process provides methods and tools for resolving these issues in ways that minimize conflicts and promote mutually beneficial solutions that articulate how public use and enjoyment of the park can be part of a strategy for ensuring that resources are protected unimpaired for future generations.

The Process and Importance of Public Input: The General Management Plan process provides for early identification of concerns, issues, expectations, and values of existing and potential visitors, neighbors, people with traditional cultural ties to lands within the park, cooperating associations, other partners, scientists, scholars, and other government agencies. Input gathered during this process will be used in the Environmental Impact Statement to assess and compare the effects of each alternative on the natural and man-made environment. The Environmental Impact Statement will also recommend selection of a "preferred" management alternative. The National Park Service is requesting the public's input throughout this project.

Supplementary Information: The Draft and Final General Management Plan/Environmental Impact Statement will be made available to known interested parties and appropriate agencies. A regional map of the park is available on the internet at http://www.nps.gov/cuga/pphtml/maps.html and is also attached for your convenience. Please visit our website for additional information: http://www.nps.gov/cuga/pphtml/documents.html and http://planning.nps.gov/. Full public participation by federal, state, and other agencies as well as other concerned organizations and private citizens are invited throughout the preparation of this document. The National Park Service would like to thank you for reviewing this letter, and for preparing and submitting your written comments.

Sincerely,

Mark H. Woods, Superintendent
Cumberland Gap National Historical Park

Coordination with State Historic Preservation Officers of Kentucky, Tennessee, and Virginia

Coordination letters were sent to the State Historic Preservation Officers of Kentucky, Tennessee, and Virginia.

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United States Department of the Interior

NATIONAL PARK SERVICE
Cumberland Gap National Historical Park
P.O. Box 1848
Middlesboro, KY 40965-1848

IN REPLY REFER TO:
D18

August 7, 2009

David Morgan
Executive Director
State Historic Preservation Officer
Kentucky Heritage Council
300 Washington Street
Frankfort KY 40601

Dear Mr. Morgan:

The National Park Service (NPS) is in the process of development of a General Management Plan and its associated environmental impact statement for Cumberland Gap National Historical Park. The purpose of a General Management Plan is to ensure that each park has a clearly defined direction for resource protection and visitor use. The basic foundation for decision-making will be developed in consultation with Servicewide program managers, interested parties, and the general public. It will be based on an adequate analysis of existing and potential resource conditions and visitor experiences, environmental (including natural, cultural and socioeconomic) impacts, and costs of alternative course of action. The development of a park General Management Plan will comply with the National Environmental Policy Act by preparing and environmental impact statement.

We would like your office to participate in the development of this planning effort. The draft environmental impact statement will be forwarded to your office for your review and comment.

We believe that the implementation of the proposed project may or could affect properties included in or that may be eligible for inclusion in the National Register of Historic Places. Therefore, we would like to invite your office to participate in this planning effort in accordance with 36 CFR 800, and the 1995 Servicewide Programmatic Agreement among your office, the Advisory Council on Historic Preservation, and the National Park Service.

We look forward to your participation in the planning process and believe that it will help ensure that natural resources are adequately considered during the preparation of the plan and accompanying environmental impact statement. If you have any questions, or require additional information, please contact Mr. Chris Phillips at (606) 246-1050.

Sincerely,

Mark H. Woods
Superintendent

TAKE PRIDE IN AMERICA

United States Department of the Interior

NATIONAL PARK SERVICE
Cumberland Gap National Historical Park
P.O. Box 1848
Middlesboro, KY 40965-1848

IN REPLY REFER TO:
D18

August 7, 2009

Milton Hamilton
State Historic Preservation Officer
Department of Environment & Conservation
401 Church Street L & C Tower 21st Floor
Nashville TN 37243

Dear Mr. Hamilton:

The National Park Service (NPS) is in the process of development of a General Management Plan and its associated environmental impact statement for Cumberland Gap National Historical Park. The purpose of a General Management Plan is to ensure that each park has a clearly defined direction for resource protection and visitor use. The basic foundation for decision-making will be developed in consultation with Servicewide program managers, interested parties, and the general public. It will be based on an adequate analysis of existing and potential resource conditions and visitor experiences, environmental (including natural, cultural and socioeconomic) impacts, and costs of alternative course of action. The development of a park General Management Plan will comply with the National Environmental Policy Act by preparing and environmental impact statement.

We would like your office to participate in the development of this planning effort. The draft environmental impact statement will be forwarded to your office for your review and comment.

The eventual implementation of the project has the potential to affect endangered or threatened species, or their designated habitat. Therefore, we would like to request any information that your office may have regarding the presence of any listed Federal threatened or endangered species, species proposed for listing, and existing or proposed critical habitats which may exist at Cumberland Gap National Historical Park, which includes portions of Bell and Harlan Counties Kentucky, Lee County, Virginia and Claiborne County, Tennessee. This request is being made pursuant to Section 7 of the Endangered Species Act. A similar request regarding State species was made to each of the three state fish and wildlife agencies.

We look forward to your participation in the planning process and believe that it will help ensure that natural resources are adequately considered during the preparation of the plan and accompanying environmental impact statement. If you have any questions, or require additional information, please contact Mr. Chris Phillips at (606) 246-1050.

Sincerely,

Mark H. Woods
Superintendent

TAKE PRIDE IN AMERICA

United States Department of the Interior

NATIONAL PARK SERVICE
Cumberland Gap National Historical Park
P.O. Box 1848
Middlesboro, KY 40965-1848

IN REPLY REFER TO:
D18

August 7, 2009

Kathleen Kilpatrick
State Historic Preservation Officer
Department of Historic Resources
2801 Kensington Avenue
Richmond VA 23221

Dear Ms. Kilpatrick:

The National Park Service (NPS) is in the process of development of a General Management Plan and its associated environmental impact statement for Cumberland Gap National Historical Park. The purpose of a General Management Plan is to ensure that each park has a clearly defined direction for resource protection and visitor use. The basic foundation for decision-making will be developed in consultation with Servicewide program managers, interested parties, and the general public. It will be based on an adequate analysis of existing and potential resource conditions and visitor experiences, environmental (including natural, cultural and socioeconomic) impacts, and costs of alternative course of action. The development of a park General Management Plan will comply with the National Environmental Policy Act by preparing and environmental impact statement.

We would like your office to participate in the development of this planning effort. The draft environmental impact statement will be forwarded to your office for your review and comment.

We believe that the implementation of the proposed project may or could affect properties included in or that may be eligible for inclusion in the National Register of Historic Places. Therefore, we would like to invite your office to participate in this planning effort in accordance with 36 CFR 800, and the 1995 Servicewide Programmatic Agreement among your office, the Advisory Council on Historic Preservation, and the National Park Service.

We look forward to your participation in the planning process and believe that it will help ensure that natural resources are adequately considered during the preparation of the plan and accompanying environmental impact statement. If you have any questions, or require additional information, please contact Mr. Chris Phillips at (606) 246-1050.

Sincerely,

Mark H. Woods
Superintendent

TAKE PRIDE IN AMERICA

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Coordination with United States Fish and Wildlife Service, Kentucky, Tennessee, and Virginia

Coordination letters were sent to the United States Fish and Wildlife Service offices.

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United States Department of the Interior

NATIONAL PARK SERVICE
Cumberland Gap National Historical Park
P.O. Box 1848
Middlesboro, KY 40965-1848

IN REPLY REFER TO:
DTS

August 7, 2009

Roberta Hylton
U.S. Fish and Wildlife Service
Department of Interior
Southwest Virginia Field Office
330 Cummings Street
Abingdon VA 24210

Dear Mr. Hylton:

The National Park Service (NPS) is in the process of development of a General Management Plan and its associated environmental impact statement for Cumberland Gap National Historical Park. The purpose of a General Management Plan is to ensure that each park has a clearly defined direction for resource protection and visitor use. The basic foundation for decision-making will be developed in consultation with Servicewide program managers, interested parties, and the general public. It will be based on an adequate analysis of existing and potential resource conditions and visitor experiences, environmental (including natural, cultural and socioeconomic) impacts, and costs of alternative course of action. The development of a park General Management Plan will comply with the National Environmental Policy Act by preparing and environmental impact statement.

We would like your office to participate in the development of this planning effort. The draft environmental impact statement will be forwarded to your office for your review and comment.

The eventual implementation of the project has the potential to affect endangered or threatened species, or their designated habitat. Therefore, we would like to request any information that your office may have regarding the presence of any listed Federal threatened or endangered species, species proposed for listing, and existing or proposed critical habitats which may exist at Cumberland Gap National Historical Park, which includes portions of Bell and Harlan Counties Kentucky, Lee County, Virginia and Claiborne County, Tennessee. This request is being made pursuant to Section 7 of the Endangered Species Act. A similar request regarding State species was made to each of the three state fish and wildlife agencies.

We look forward to your participation in the planning process and believe that it will help ensure that natural resources are adequately considered during the preparation of the plan and accompanying environmental impact statement. If you have any questions, or require additional information, please contact Mr. Chris Phillips at (606) 246-1050.

Sincerely,

Mark H. Woods
Superintendent

TAKE PRIDE IN AMERICA

United States Department of the Interior

NATIONAL PARK SERVICE
Cumberland Gap National Historical Park
P.O. Box 1848
Middlesboro, KY 40965-1848

IN REPLY REFER TO:
D18

August 10, 2009

Lee Andrews
Ecological Services Field Office
U.S. Fish and Wildlife Service
Department of Interior
330 W. Broadway, Suite 265
Frankfort, KY 40601

Dear Mr. Andrews:

The National Park Service (NPS) is in the process of development of a General Management Plan and its associated environmental impact statement for Cumberland Gap National Historical Park. The purpose of a General Management Plan is to ensure that each park has a clearly defined direction for resource protection and visitor use. The basic foundation for decision-making will be developed in consultation with Servicewide program managers, interested parties, and the general public. It will be based on an adequate analysis of existing and potential resource conditions and visitor experiences, environmental (including natural, cultural and socioeconomic) impacts, and costs of alternative course of action. The development of a park General Management Plan will comply with the National Environmental Policy Act by preparing and environmental impact statement.

We would like your office to participate in the development of this planning effort. The draft environmental impact statement will be forwarded to your office for your review and comment.

The eventual implementation of the project has the potential to affect endangered or threatened species, or their designated habitat. Therefore, we would like to request any information that your office may have regarding the presence of any listed Federal threatened or endangered species, species proposed for listing, and existing or proposed critical habitats which may exist at Cumberland Gap National Historical Park, which includes portions of Bell and Harlan Counties Kentucky, Lee County, Virginia and Claiborne County, Tennessee. This request is being made pursuant to Section 7 of the Endangered Species Act. A similar request regarding State species was made to each of the three state fish and wildlife agencies.

We look forward to your participation in the planning process and believe that it will help ensure that natural resources are adequately considered during the preparation of the plan and accompanying environmental impact statement. If you have any questions, or require additional information, please contact Mr. Chris Phillips at (606) 246-1050.

Sincerely,

Mark H. Woods
Superintendent

TAKE PRIDE IN AMERICA

Coordination with Federally-Recognized American Indian Tribes with Ancestrial Lands in Kentucky, Tennessee, and Virginia

Coordination letters were sent to Federally-recognized American Indian Tribes with ancestrial lands in Kentucky, Tennessee, and Virginia requesting feedback concerning this General Management Plan/ Environmental Impact Statement. These letters were followed up with individual phone calls. A list of American Indian Tribes contacted is provided in Chapter 6, and a sample consultation letter follows.

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United States Department of the Interior

NATIONAL PARK SERVICE
Cumberland Gap National Historical Park
US 25E South
P. O. Box 1848
Middlesboro, KY 40965-1848
(606) 248-2817

IN REPLY REFER TO:

D-18

October 8, 2004

Chief Dallas Proctor
United Keetoowah Band of Cherokee Indians
P.O. Box 746
Tahlequah, OK 74465

Dear Chief Proctor:

In accordance with the National Environmental Policy Act of 1969 (Public Law 91-190, as amended), the National Park Service is preparing a General Management Plan and Environmental Impact Statement each for Cumberland Gap National Historical Park. The purpose of this letter is to request your comments on issues of concern that you might have regarding the General Management Plan/Environmental Impact Statement and your input on the future management direction for the park. A regional map of each park is available on the internet at http://www.nps.gov/cuga/pphtml/maps.html. A map is also attached for your convenience.

The Purpose and Need: The purpose of the Cumberland Gap National Historical Park is to preserve and protect the historic Cumberland Gap, including the Warrior's Path of the American Indian and the pioneer Wilderness Road, and to preserve and interpret its scenic, geological, cultural, natural, and historic resources for the enjoyment, benefit and inspiration of present and future generations. The National Parks and Recreation Act of 1978, Public Law 95-625, requires the National Park Service to prepare a General Management Plan for every area that it administers. The current plan for Cumberland Gap National Historical Park was completed in 1979 and is now outdated to address current and future management needs. There is a clear need to update the General Management Plan for Cumberland Gap National Historical Park in order to provide essential guidance and direction for attaining desired future conditions, visitor experiences, and operational principles.

The general management planning process provides a comprehensive approach to establish the basic management philosophy for each park and provide strategies for addressing issues and achieving identified management objectives. The resulting plans will evaluate the environmental impacts of a range of

management alternatives for each park. The plans will further examine different management approaches to preserving significant natural and cultural resources, competing demands for limited resources, funding and staffing priorities, and differing interests and views of what is most important to guide each park into the future.

National Park Service managers constantly make difficult decisions about ways to preserve significant natural and cultural resources for public enjoyment, while balancing competing demands for limited resources, setting priorities for using available funds and staff, and weighing conflicting views of what is most important. The General Management Plan process provides methods and tools for resolving these issues in ways that minimize conflicts and promote mutually beneficial solutions for public enjoyment of the park and the protection of park resources for future generations.

The Process and Importance of Public Input: The general management planning process provides for early identification of concerns, issues, expectations, and values of visitors, neighbors, people with traditional cultural ties to lands and waters within the park, cooperating associations, other partners, scientists, scholars, and other government agencies. Public input gathered during this process will be used in the Environmental Impact Statement to assess and compare the effects of each alternative on the natural and man-made environment. The Environmental Impact Statement will also recommend selection of a "preferred" management alternative for each park. The National Park Service is requesting your input in these early stages and throughout this project.

Who to Contact: If vou are interested in providing input on the General Management Plans/Environmental Impact Statements, you are invited to respond by mail or telephone to:

Mr. Mark H. Woods, Superintendent
Cumberland Gap National Historical Park
P.O. Box 1848
Middlesboro, KY 4o965-i8q8
(606) 246-1052
CUGA Superintendent@nps.gov

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Submitting comments will ensure that you are included on the mailing list for further information. If you do not wish to comment at this time, but want to remain on the mailing list, you must notify the planning team at the address listed above.

Supplementary Information: The Draft and Final General Management Plans/Environmental Impact Statements will be made available to known interested parties and appropriate agencies. Please visit our websites for additional information: http://planning.nps.gov/ and http://www.nps.gov/cuga/pphtml/documents.html. Full public participation by federal, state, and other agencies as well as other concerned organizations and private citizens are invited throughout the

preparation of this document. The National Park Service would like to thank you for reviewing this letter, and for preparing and submitting your written comments.

Sincerely,

Mark H. Woods
Superintendent

Letters also sent to:

Chief Charles Enyart
Governor Kenneth Blanchard
Chief Chad "Corntassle" Smith
Chief Michelle Hicks
Chairman Ron Spaulding

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APPENDIX K
LIST OF RECIPIENTS

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AGENCIES, ORGANIZATIONS, AND INDIVIDUALS RECEIVING A COPY OR NOTIFICATION OF AVAILABILITY OF THIS DOCUMENT

Federal Agencies

Advisory Council on Historic Preservation

Federal Highway Administration

U.S. Army Corps of Engineers

U.S. Department of Agriculture

National Forest Service

Daniel Boone National Forest

Natural Resources Conservation Service

U.S. Department of the Interior

National Park Service

Big South Fork NRRA

Southeast Archeological Center

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

U.S. Geological Survey

Office of Surface Mining

American Indian Tribal Governments

Absentee-Shawnee Tribe of Oklahoma

Cherokee Nation of Oklahoma

Chief, Eastern Shawnee Tribe of Oklahoma

Eastern Band of the Cherokee Nation, NC

Shawnee Tribe, OK

United Keetoowah Band of Cherokee Indians, OK

Federal and State Officials

Lamar Alexander, Office of Senator

George Allen, Senator

Rick Boucher, Representative

Jim Bunning, Senator

Steve Cawood, Representative TN

Becky Coleman, Chief of Staff Congressmen Rick Boucher

William Frist, Senator

Mr. Michael R. Hidgon, Office of Congressman Hal Rogers

Benny Kiester, Representative VA

Terry Kilgore, Representative VA

Ken Lucas, Representative

Mitch McConnell, Senator KY

Daniel Mongiardo, Senator KY

Rick Nelson, Representative KY

Linda A. Ponce, District Director, Third District Tennessee

Clarence E. Phillips, Virginia House of Delegates

Harold Rogers, Congressman U.S. House of Representatives

Jackie T. Stump, Virginia House of Delegates

Zach Wamp, Representative TN

William Wampler, Jr., Senator VA

John Warner, Senator

Governors

Phil Bredesen, TN

Ernest Fletcher, KY

Mark Warner, VA

State Agencies

Breaks Interstate Park, VA

Cumberland Falls St. Resort Park, KY

Cumberland Gap Tunnel Authority, KY

Cumberland Trail State Park, TN

Cumberland Trail State Scenic Trails, TN

Davy Crockett State Park, TN

Dr. Thomas Walker State Historical Site, KY

East Tennessee Development District, Department of Tourism

East Tennessee Director Heritage & Community Tourism Development Division, Tennessee Department of Tourist Development

Kentucky Department of Fish & Wildlife Resources

Kentucky Division of Forestry

Kentucky Environmental Quality Comission

Kentucky Historical Society

Kentucky Secretary of State

Kentucky State Historic Preservation Officer, Kentucky Heritage Council

Kentucky State Nature Preserves Commission

Kentucky Tourism Development Cabinet

Kentucky Transportation Cabinet

Kentucky Visitor Center

Kingdom Come State Park, KY

Levi Jackson Wilderness Road State Park, KY

Middle East Tennessee Tourism Council

Natural Bridge State Resort Park, KY

Natural Tunnel State Park, VA

Pine Mountain State Resort Park, KY

Sycamore Shoals State Historic Area, TN

Tennessee Department of Tourism Development

Tennessee Department of Transportation

Tennessee Office of Homeland Security

Tennessee State Historic Preservation Officer, Department Environment & Conservation

Virginia Department of Conservation and Recreation

Virginia Division of State Parks

Virginia Game and Inland Fisheries

Virginia Office of Review and Compliance

Virginia Secretary of Natural Resources

Virginia State Historic Preservation Office, Department of Historic Resources

Wilderness Road State Park, VA

City and County Governments

Counties

Bell County Tourism, KY

Economic Development, Lee County, VA

Harlan County Tourism–

Harlan County Director of Strategic Development, KY

Harlan County Tourism, KY

Joseph Grieshop, Judge Executive Harlan County, KY

Lee County Administrator, VA

Lee County Board of Supervisors, VA

Lee County Economic Development

Ralph E. McClanahan II., District Judge, Estill, Lee and Owsley Counties, KY

Virgil Herrell, Claiborne County Executive, TN

William P. Kelley, Bell County Judge Executive, KY

Cities

Bill Fultz, Mayor of Harrogate, TN

Bill Haslam, Mayor of Knoxville, TN

Ben Hickman, Mayor of Middlesboro, KY

Betty Howard, Mayor of Benham, KY

Mayor Pineville, KY

Tom Bennett, Commissioner Frankfort, KY

Paul Chapman, District Director of Morristown, TN

John Douglas, Mayor Cumberland Gap, TN

Honorable Tom Vicini, Mayor of Lynch, KY

School Districts

Bell County Schools, KY

Claiborne County Schools, TN

Libraries

Blount County Public Library, TN

Harlan County Public Library, KY

Middlesboro-Bell Co. Public Library, KY

Organizations and Businesses

Abraham Lincoln Museum, TN

Akins Crisp Public Strategies, TN

American Hiking Society, MD

American Hiking Society Pine Mountain Trail Conference, KY

Bell County 4-H Club, KY

Bell County Historical Society, KY

Bell County Schools, KY

Boy Scouts of America, KY

Center for Rural Development, KY

Cherokee Rod & Gun Club, KY

Claiborne County Schools, TN

Coca-Cola Bottling, KY

Coffey's Bicycle Sales, KY

Cooperative Ecosystems Study Unit Council, DC

Cove Ridge Center Foundation & Advisory Board, VA

Crazy Creek ATV Club, KY

Cumberland County Sportsman Club, KY

Cumberland Tourism Commission, KY

Cumberland Trail Conference, TN

Cumberland Trails United Way, KY

Daniel Boone Wilderness Trail Association, VA

Dixon Educational Consulting, VA

East Tennessee Development District

East Tennessee State University

Eastern Kentucky ATV Association

Eastern National, PA

Estes Brothers Construction, VA

Farmers and Miners Bank, VA

Fern Lake Fishing Club

First Frontier Corridor Committee

First State Bank, KY

Four Wheeling Black Mountain, KY

Friends of the Cumberland Trail, TN

Friends of Wilderness Road State Park, VA

Happy Top ATV Trails Inc., KY

Harlan County Tourism

Heart of Appalachian Tourism Authority, VA

Henderson Settlement, KY

Hiking/Biking Club of Cumberland Gap, TN

Hines and Fugate PLC

Kentucky Artisan Center

Kentucky ATV

Kentucky B.A.S.S. Fishing

Kentucky Center for Rural Development

Kentucky Coal Mining Museum

Kentucky Network of Outdoor Women

Kentucky Riders

Kentucky Ridge Runners

Kentucky Tourism Council

Kingsport Convention & Visitor Bureau, TN

LENOWISCO Planning District, VA

Lincoln Memorial University, TN

Long Distance Trails Group-Salt Lake City, UT

Marcom Corporation, TN

Middlesboro 4-H Council, KY

Middlesboro ARH Hospital, KY

Middlesboro Rod and Gun Club, KY

Mill Creek Horse Stables, KY

Miller Hollow Equestrian Center, TN

Mountain Empire Community College, VA

National Audubon Society Kentucky Chapter

National Parks & Conservation Association

National Society of the Daughters of the American Revolution, NC Region, Kentucky Region

Netherland Inn, TN

P-38 Lost Squadron, KY

Pine Mountain Grotto Inc., KY

Pine Mountain Trail Conference, KY

Pioneer Village, VA

Powell Valley National Bank, VA

Ramada Inn, Harrogate, TN

Rocky Mount Museum, TN

Save Our Cumberland Mountains, TN

Scott County Regional Horse Association, VA

Sharps ATV Riding Range Inc., KY

Sierra Club Cumberland Chapter, KY

Sierra Club Tennessee Chapter

Southeast Community College, KY

Southern and Eastern Kentucky Tourism Development Association

Southern Appalachian Initiative of the American Hiking Society, TN

Southern Appalachian Man and the Biosphere, TN

Southern Highland Craft Guild

Southwest Virginia Museum

Student Conservation Association

Tennessee Citizens for Wilderness Planning

Tennessee Civil War National Heritage Area, Middle Tennessee State University

Tennessee Clean Water Network

Tennessee Environmental Council

Tennessee Trails Association

Tourism Development East Kentucky Corporation

The Trust for Public Land, TN

Thomas Walker Civic Club, Ewing, VA

Union College, KY

University of Georgia, Department of Geography

University of Kentucky

University of North Carolina, Asheville

University of Tennessee, Archeology Research Center

Upper Cumberland Grotto, TN

Vaughn & Melton Engineers & Architects, KY

Virginia Institute of Technology Department of Urban Affairs and Planning

Virginia Living Museum

Western Kentucky Recreation Association Inc.

Wilderness Road Council Girl Scouts, KY

The Wilderness Road Company, KY

Wilderness Trail Association

Wilderness Inquiry, MN

News Organizations

Associated Press, KY

Claiborne County Progress, TN

The Coalfield Progress, VA

Courier Journal, KY

Daily News, KY

The Dickenson Star, VA

Editor Kentucky Explorer, KY

Harlan Daily Enterprise, KY

Kingsport Times News, TN

Kingsport Times News, VA

Knoxville News Sentinel, TN

Lexington Herald Leader, KY

Mountain Advocate, KY

Norton Press, Inc., VA

Pineville Sun, KY

Powell Valley News, VA

The Post, VA

Radio

WFSR Radio, KY

WFXY Radio, KY

WHLN Radio, KY

TV Channels

WYMT-TV, KY

Chamber of Commerce

Bell County Chamber, KY

Claiborne County Chamber of Commerce, TN

Lee County Chamber of Commerce, VA

Scott County Chamber of Commerce, VA

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