NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR

Equestrian Management Plan and Environmental Assessment

Ninety Six National Historic Site, South Carolina
November 2018

Front cover: Island Ford Road. NPS photo.

HOW TO COMMENT ON THIS PLAN

The National Park Service (NPS) welcomes comments on this plan and will accept them for 30 days following the official public release. To respond, please submit written comments by the following means. The preferred method for receiving comments is through the NPS Planning, Environment, and Public Comment (PEPC) system.

U.S. Mail

National Park Service
Re: Equestrian Management Plan
Ninety Six National Historic Site
1103 Highway 248 S
Ninety Six, SC 29666

Internet Website:

The NPS Planning, Environment, and Public Comment (PEPC) website http://parkplanning.nps.gov/NISI. Click on the "Open for Comment" link on the left side of the page to access the online document.

Hand Delivery

Written comments can be provided at public meetings, if applicable, or by dropping them off at the park. Should NPS management decide to host public meetings, the dates, times, and locations will be announced in the media and on the NPS PEPC website following release of this document. Reviewers are encouraged to use the PEPC website to comment and access the document if possible. Please submit only one set of comments.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. Although you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

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Purpose and Need for Action

Making cornshuck dolls. NPS photo.

Cannon and camp exhibit. NPS photo.

Fishing rodeo activity. NPS photo.

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CHAPTER 1: PURPOSE AND NEED FOR ACTION

PURPOSE OF THE PLAN

The purpose of this equestrian management plan and environmental assessment is to evaluate equestrian use and its impacts on Ninety Six National Historic Site's (hereafter the park) historic and natural landscapes. The plan will evaluate the impacts of several alternatives, including the no-action alternative (continuation of the current equestrian trails and management policies), to assist the management team and superintendent in deciding what equestrian opportunities will be restricted or allowed in order to provide visitors with adequate and appropriate use opportunities. The plan will contain guidelines and standards to govern equestrian activities within the park.

NEED FOR ACTION

Over the last five years, there has been a steady increase in equestrian use within the park. This increase in unregulated equestrian use, combined with heavy rain events has resulted in an increase in erosion and other adverse resource impacts. Concerns about how to prevent erosion, effects to water quality, and damage to historic landscapes and trails while providing for a variety of recreational, inspirational, and educational uses are high priorities for park staff.

During the first five days of October 2015, the area surrounding the park received 8 to12 inches of rain that produced flash flooding across the area, particularly in low-lying areas. After the statewide historic rainfall, the park received additional significant precipitation and suffered more flash flooding. Continued rains and damage, including damage to historic resources caused by horseback riding during and directly after the rains, left many of the trails in an unstable condition. Existing trail damage resulted in the development of unauthorized trails and damage to primary historic resources such as the Gouedy Trail, Charleston Road, and the Stockade Fort. After this rain event, the park closed the trails to equestrian use for several months while it evaluated the damage and conducted archeological assessments. NPS archeologists determined that the equestrian use on trails and fire roads in the northern part of the park (those specifically listed under alternative A) were not significantly impacting any archeological sites. The park then reopened these trails to equestrian use on September 9, 2016, with the caveat that the trails would be closed for short periods after receiving predetermined amounts of rain.

GOALS AND OBJECTIVES

The principal goal of this equestrian management plan and planning process is to accommodate equestrian use of the park and enhance the experiences of the horse riding community, while protecting and preserving the cultural and natural resources within the park's boundaries. This plan will also evaluate equestrian user capacity by developing indicators and thresholds.

It will be important to engage stakeholders as partners in developing and maintaining equestrian trails and facilities because the park has a limited number of full-time staff to manage and maintain its 1,022 acres with multiple structures, landscapes, archeological resources, streams, and wetlands.

BACKGROUND

A brief description of the park, its purpose and significance, fundamental resources and values, and other important resources and values can be found in the park's 2014 foundation document.

VISITOR USE MANAGEMENT AND THE PLANNING PROCESS

Visitor use management is the proactive and adaptive process of planning for and managing characteristics of visitor use and its physical and social setting using a variety of strategies and tools to sustain desired resource conditions and visitor experiences. Visitor use management is important because National Park Service (NPS) managers strive to maximize opportunities and benefits for visitors, while achieving and maintaining desired conditions for resources and visitor experiences in a particular area. Managing visitor access and use for visitor enjoyment and resource protection is inherently complex. It requires that managers analyze not only the number of visitors but also where they go, what they do, their impacts on resources and other visitor experiences, and the underlying causes of those impacts. Managers must acknowledge the dynamic nature of visitor use, the vulnerabilities of natural and cultural resources, and the need to be responsive to changing conditions.

This plan uses the visitor use management framework to develop a long-term strategy for managing visitor use within the monument. The general planning process used for this plan is outlined below and is consistent with the guidance outlined by the Interagency Visitor Use Management Council (IVUMC, www.visitorusemanagement.nps.gov).

Desired Conditions

The desired conditions are defined as statements of aspiration that describe resource conditions (including fundamental resources and values), visitor experiences and opportunities, and facilities and services that an agency strives to achieve and maintain in a particular area. Desired conditions describe what conditions, outcomes, and opportunities are to be achieved and maintained in the future, not necessarily what exists today. Desired condition descriptions paint a picture of what the equestrian trails at the park will look like, feel like, sound like, and function like in the future. They do not answer the questions of how conditions will be maintained or achieved.

Natural.

- Visitor-related impacts from equestrian use are minimized (e.g., impacts to nearby creeks, wetland damage, erosion, and introduction of invasive plant species).
- Sensitive natural areas will be restored where possible.
- The spread and introduction of invasive species will be prevented (from equestrian use, equipment, and/or feed).
- Social trails and trampling will be minimized to preserve natural and cultural resources.

Cultural.

- The park's historic roads and trails retain their overall design and character-defining features.
- The original intent and historic significance of the four roads are conveyed to visitors.
- The integrity of ethnographic resources, values, and cultural landscapes will be safeguarded to preserve significant attributes and uses that contribute to historical significance along equestrian use trails.
- Archeological resources will be preserved and protected from unintentional impacts and/or disturbance and damage associated with equestrian use.
- Historic features will be preserved and protected from damage associated with equestrian use.

Visitor Experience.

- Visitors have the opportunity to experience recreation in a natural setting with wildlife viewing opportunities.
- Visitors have opportunities for safe, convenient, and sustainable access to park resources and experiences.
- Visitors have high-quality experiences in settings with a low visitor density without crowding, congestion, or visitor conflict.
- During special events, visitors can expect high-quality experiences but with higher density; reduced congestion and visitor conflict remain desired conditions for these events.
- The park will provide visitor access to and opportunities for quality equestrian experiences.
- High-quality programs, services, and facilities will be accessible to all and designed to enhance the visitor experience.
- The park will provide opportunities for place-based interpretation (demonstrations and information) of the history of traditional equestrian use and significance of the site.
- The park will be a destination for equine tourism including high-quality trails, unique riding experiences, and understanding the significance of site.
- Equestrian stakeholders will be engaged and leveraged for trail stewardship and trusted partners in trail management.
- Equestrian stakeholders are exposing visitors to new recreation opportunities.

Scope of the Environmental Assessment

The extent and nature of environmental issues and alternatives that should be considered during the NEPA review were considered early in the process. Issues were identified to help emphasize the important environmental concerns related to the proposal and to help identify impact topics and focus the impact analysis.

Determination of topics for impact evaluations were identified based upon the following:

- Federal laws, regulations and executive orders, including NEPA guidance documents
- NPS Management Policies (NPS 2006)
- Public scoping input
- Relevance of proposed actions to park resources.

When an alternative is selected and approved, the implementation of that alternative will depend upon future funding. The 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.

The implementation of the approved plan could also be affected by other factors. Once the plan has been approved, additional feasibility studies and more detailed planning and environmental documentation may need to be completed, as appropriate, before any proposed actions can be carried out.

Impact Topics

An important part of planning is seeking to understand the consequences of making one decision over another. Environmental assessments identify the anticipated impacts of possible actions on resources and on park visitors and neighbors.

Impact topics are specific natural, cultural, or socioeconomic resources or values (including visitor use and experience and park operations) that could be affected by implementation of any of the alternatives described in the plan, including the no-action alternative. Impacts to these resources or values must be identified, and the intensity or magnitude, duration, and timing of the effect to each resource must be disclosed in the environmental consequences section of the plan.

The impact topics identified for this plan are outlined in this section; they were identified based on federal laws and other legal requirements, Council on Environmental Quality guidelines, NPS management policies, staff subject-matter expertise, and issues and concerns expressed by the public and other agencies early in the planning process.

Impact Topics Retained for Analysis. Impact topics represent resources that could be affected, either beneficially or adversely, by implementing any of the proposed alternatives. The National Park Service used an interdisciplinary review process, existing studies and data, and public comments to determine which resources would likely be affected by this project. The following topics are carried forward for further analysis in this plan:

- Cultural Resources—including ethnographic, archaeological, and cultural landscapes.
- Soils
- Vegetation
- Water Quality
- Visitor Use and Experience

Impact Topics Dismissed from Further Consideration. The following topics were dismissed from further analysis in this document for the reasons indicated.

Museum Collections—Museum collections are materials possessing functional, aesthetic, cultural, symbolic, and/or scientific value, and are usually movable by nature or design. Museum objects include prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens that are part of a museum collection. The park's museum collections are stored and secured in buildings both onsite and offsite and, as such, will not be affected by any of the alternatives in this plan. Therefore, this topic is dismissed from further consideration.

Acoustic Environment and Soundscape—Director's Order #47 (Preservation of the Acoustic Environment and Noise Management in the National Park system), NPS Management Policies (§4.9 and §5.3.1.7), require national park managers to preserve and restore the acoustic environment and soundscapes of park units. Acoustic resources include components of the cultural, physical, and biological setting (for example, the sounds of birds and flowing water). The soundscape (i.e., natural quiet) at the park is a special resource to park visitors. None of the alternatives in this management plan are expected to impact the acoustic environment of the park. Therefore, this topic was dismissed from further consideration.

Socioeconomic Environment—The NEPA process requires an examination of social and economic impacts caused by federal actions as part of a complete analysis of the potential impacts of these actions on the "human environment." Greenwood County in South Carolina makes up the affected area for the socioeconomic analysis. The alternatives described in this plan affect only equestrian use at the park and therefore the only potential effects on the local economy would be to businesses related to recreational horse riding. Since there are no concessioners deriving income directly from providing rides or other equestrian services at the park, there would be no measurable impact on these types of businesses as a result of implementing any of the alternatives in the plan. There are

numerous businesses providing equestrian boarding, riding lessons, training, clinics, and trails within 50 miles of Greenwood, South Carolina. These businesses and those that provide feed, equipment, and veterinary services off-site would be affected negligibly if at all. Therefore, this topic was dismissed from further analysis.

Environmental Justice—Executive Order 12898 ("Federal 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 disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. None of the alternatives considered in this document would result in any identifiable adverse health effects, and none of the impacts to the natural and physical environment would significantly and adversely affect any minority or low-income population or community. Therefore, environmental justice was dismissed as an impact topic.

Indian Trust Resources and Indian Sacred Sites—The proposed project area does not contain Indian Trust Resources or known Indian Sacred Sites and thus was dismissed from further analysis.

Air Quality—The alternatives in this plan are expected to have only the most negligible and/or temporary effects on air quality. Therefore, this topic was dismissed from further consideration.

Climate Change—The impacts of climate change on the park are not expected to differ among the alternatives, and the lack of quantitative information about climate change effects adds to the difficulty of predicting how these impacts will be realized within its boundaries. For example, climate change may impact the park's cultural resources. Changes in the pH of precipitation (i.e., acid rain) because of greenhouse gases and other air pollution can degrade historic structures and monuments. Visitor experiences may be diminished as trails, archeological, and historic resources become compromised, lose integrity, or are lost because of the effects of climate change.

Climate change will also likely affect the vegetation and wildlife communities of the park because of the projected changes in annual temperature and precipitation and increases in extreme weather events. Some models predict an increase while others predict a decrease in precipitation in this region of the country. However, the rate and magnitude of these changes to specific populations of plants and animals is difficult to predict.

The range of variability in the potential effects of climate change is large in comparison to what we know about the future under an altered climate regime in the park in particular. Therefore, the potential effects of this dynamic climate on park resources were included in this chapter; however, they will not be analyzed in detail in "Chapter 4, Environmental Consequences" with respect to each alternative because of the uncertainty and variability of outcomes and because these impacts are not expected to differ among the alternatives.

Although many specific effects of climate change and the rates of changes are not presently known, additional monitoring data and climate change modeling may become available in the near future or in the longer term. The best available scientific climate change data and modeling and adaptation decision support tools will be incorporated into specific management planning, decisions, or actions that may be taken under any of the alternatives described in this plan.

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Chapter 2

Alternatives

Town of Ninety Six illustration by Steven Patricia.

Swamp Fox Francis Marion by Robert W. Wilson.

Drawing tools interpretive exhibit. NPS photo.

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CHAPTER 2: ALTERNATIVES

INTRODUCTION

The National Park Service is undertaking this plan to identify objectives and strategies to manage equestrian use while maintaining and improving the health of park landscapes, protecting cultural resources, minimizing potential conflicts among users, promoting the safety of all, and ultimately, enhancing visitor experiences. The National Park Service is preparing this plan as required under the National Environmental Policy Act and is following guidance provided in the NPS NEPA Handbook.

In recent years, equestrian use of trails within the park has increased. This, combined with periods of heavy rain, has had an impact on the park's resources. The federal action herein is the identification and implementation of the management, location, and appropriate use of equestrian trails. This plan is designed to address these issues and to achieve and maintain consistency with NPS management plans and policies. Pursuant to NEPA policies and the NPS NEPA Handbook, this plan was prepared to present a range of alternatives that could address the issues identified for equestrian trails and equestrian trail use, describe the potential environmental effects of each alternative, and identify a preferred alternative. The park's enabling legislation and NPS management policies provide guidance for the alternatives.

ALTERNATIVES A, B, AND C

Alternative A — No-Action Alternative

The primary purpose of the no-action alternative, required by NEPA policies, is to serve as a baseline for comparing the effects of the action alternatives to the effects of the status quo. The no-action alternative is the continuation of current management actions and direction into the future; i.e., continuing with the present course of action until that action is changed. For this plan, "no action" does not mean that the park does nothing. Rather, the no-action alternative presents how the park would continue to manage equestrian trails and equestrian use if a new plan is not approved and implemented.

The no-action alternative is a viable course of action and must be presented as an objective and realistic representation of continuing the current park management direction; otherwise, it will not be an accurate baseline against which to compare action alternatives and their potential impacts.

Under the no action-alternative, the trails, authorized uses, and facilities addressed in this plan would remain as they are. Visitors would continue to enjoy riding on sections of the East, North, and West Boundary trails, as well as the Gravel Service Road and fire roads 1, 2, 3, 4 and 5, totaling approximately 4.5 miles (figure 1). Parking is available during park operating hours, 9:00 a.m. to 5:00 p.m., Wednesday through Sunday (excluding some federal holidays). Trail maintenance would occur only as park staffing and funding allows.

FIGURE 1. MAP OF THE TRAIL SYSTEM

Sections of trails currently have stump holes filled with pea gravel/sand/dirt. Trail width is generally 4 feet and trimmed to accommodate a rider atop a horse. Carsonite markers are located at junctions and trail entrances. Some trees are painted with "tree rings" to mark the trails in lieu of markers. Bridges have been strengthened or replaced to accommodate horses, and one bridge was replaced with steel beams (22-feet long x 6-feet wide). Rocks from the creek beds were placed around and under bridges to prevent further erosion, and split rail fencing was placed on each side of the bridges.

Currently, there is a parking area located off Kinard Road that has a small culvert, driveway, and gate for access. The parking area comprises approximately 1 acre of ground surface with gravel at the entrance. Under this alternative, there would be no permanent surface changes (such as asphalt) to this area.

Alternative B (Proposed Action / Preferred Alternative)

Under this alternative, the trails open to equestrian users would be the same as those under alternative A. Visitors would continue to enjoy riding on sections of the East, North, and West Boundary trails, as well as the Gravel Service Road and fire roads 1, 2, 3, 4 and 5, totaling approximately 4.5 miles.

To manage equestrian use in a way that supports the park's desired conditions, managers would consider certain strategies. For instance, this alternative would include the implementation of a day-use (special use) permit system if the desired conditions of visitor capacity of the trails and / or the number of visitor complaints about trail use were exceeded. If the visitor capacity of the trails exceeds a combined trail capacity of 50 visitors at one time (30 equestrian users and 20 pedestrians) or if the number of complaints from trail users reaches the threshold of three per month, the park would implement a day-use permit system. These permits would allow the park to be proactive in managing and maintaining levels of visitation, ultimately ensuring visitors would have a high-quality, enjoyable experience during their trip in the park. It is possible that the park would not charge a fee for the permits during the initial year. Options for obtaining a permit include self-registration at the equestrian lot using www.pay.gov or www.recreation.gov.

The park would also install a bulletin board, trash receptacles, and a permanent gate at the equestrian lot. The gate would not be an electronic / automatic one, but would still require park staff to open and close it. Parking would be available during park operating hours. Other improvements to the equestrian lot and trails would occur as staffing and funding allows or upon the formation of a Friends or volunteer group that can devote the time, funding, and people needed to work on trails.

Alternative C

The park would close all trails to horses for resource management and protection. Equestrian use would not be allowed anywhere within the park. Pedestrian use would continue on the existing trails.

Environmentally Preferable Alternative

The environmentally preferable alternative is the action that best promotes the environmental policies outlined in the NEPA statute. These policies include fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations; attaining the widest range of beneficial uses of the environment without degradation or risk to health or safety; and preserving important historic, cultural, and natural aspects of our national heritage. Alternative B, the proposed action and NPS preferred alternative, is the environmentally preferred alternative because it would have the fewest new adverse impacts to natural resources in the park.

ACTIONS AND MITIGATION MEASURES

Congress has charged the National Park Service 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" (NPS Organic Act, 16 USC 1). As a result, the National Park Service routinely evaluates and implements mitigation measures whenever conditions occur that could adversely affect the sustainability of national park system resources.

To ensure that implementation of the plan protects natural and cultural resources unimpaired for future generations and provides high-quality visitor experiences, a consistent set of mitigation measures would be applied to management actions. Mitigation measures and management actions can be found in the following "Indicators and Thresholds" section.

INDICATORS AND THRESHOLDS

Indicators translate the broad description of desired conditions into measurable attributes (i.e., equestrian users at one time on the trails, number of visitor-created trails) that can be tracked over time to evaluate change in resources or conditions that relate to visitor experience. They are a critical component of the visitor use management framework. The planning team considered many potential issues and related indicators that would identify impacts of concern, but those described in this section were considered the most noteworthy, given the importance and vulnerability of the resources or visitor experiences affected by visitor use. In identifying meaningful indicators, the planning team also reviewed the experiences of other park units with similar issues.

Thresholds that represent the minimum acceptable condition for each indicator were assigned, taking into consideration the qualitative descriptions of the desired conditions, data on existing conditions, relevant research studies, and staff management experience. Although defined as "minimally acceptable," thresholds still represent acceptable conditions. In addition, establishing thresholds does not imply that no action would be taken prior to reaching the threshold. One goal of visitor use management is to strive to make progress toward desired conditions. Thresholds identify when conditions are about to become unacceptable and accordingly serve as a "line in the sand," letting managers and the public know that corrective action must be taken to keep conditions acceptable so that progress toward desired conditions can be achieved over time.

Indicators, thresholds, triggers (when identified), and associated potential management strategies (figure 2) that would be implemented as a result of this planning effort are described in the following sections. In general, indicators are applied across all action alternatives within the plan with the exception of alternative C. For example, in alternative C, damage to archeology and cultural feature indicators could be modified to be responsive to other user groups instead of equestrian use, and the park could continue to monitor the indicators. In this plan, thresholds can vary by alternative, zone, or site. These variations reflect the content of the management strategies ascribed for each alternative. For example, if access to a site were restricted under one alternative, the threshold would differ from that for an alternative where visitor opportunities at that site remain the same or are expanded. Where actions across the alternative do not result in differences of visitation or visitor experience to sites, the threshold does not vary.

Some management strategies vary across alternatives and would be implemented on completion of the plan to ensure thresholds are maintained and desired conditions are achieved. Several of these strategies are currently in use at the park and may be increased in response to changing conditions. The implications of indicators, thresholds, potential management strategies, and visitor capacity determinations are considered as part of the actions common to all alternatives and therefore are analyzed as part of the alternatives in chapter 4. If additional strategies are needed as outlined in the potential management strategies, details of their application would be developed as thresholds are exceeded or approached and would be informed by monitoring results.

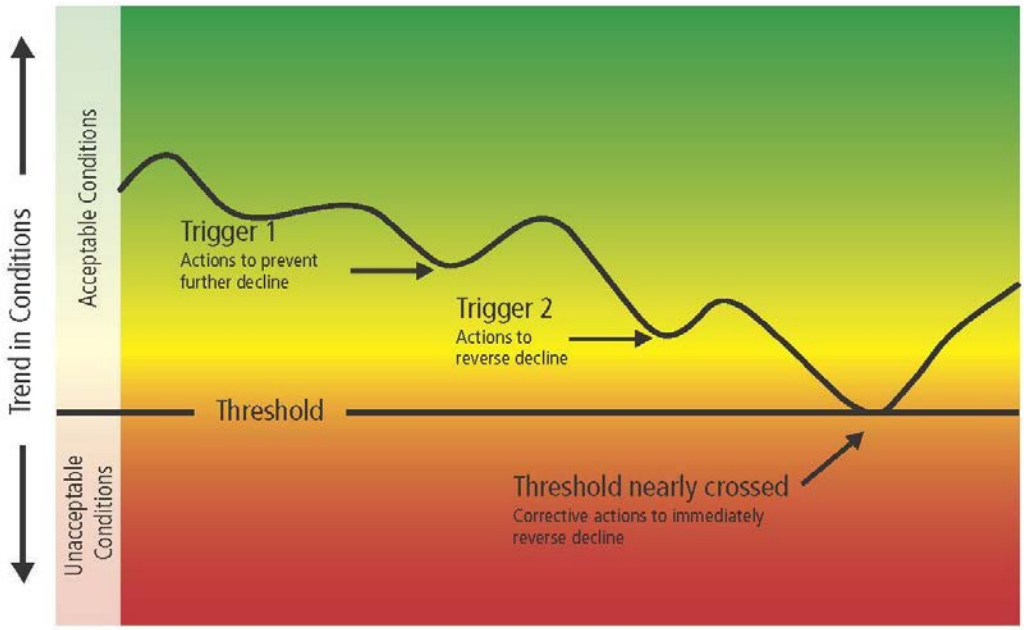

FIGURE 2. MANAGEMENT TRIGGERS AND THRESHOLDS IN RELATION TO THE TREND IN CONDITIONS

Visitor use management is an iterative process in which management decisions are continuously informed and improved through monitoring to determine the most effective way to manage visitor use to attain desired visitor experience and resource conditions. As monitoring of conditions continues, managers may decide to modify or add indicators if better ways are found to measure important changes in resource and experiential conditions. Information on the park's monitoring efforts, related visitor use management actions, and any changes to the indicators and thresholds would be available to the public.

This section presents the potential corrective strategies component of the plan common to all action alternatives. For each indicator, potential management strategies are identified. These strategies represent the range of actions in addition to those found within the alternatives that the park may take to best meet the goals and desired conditions of this plan. If it were determined through monitoring that thresholds were being approached or exceeded, the park would use one or more of these management strategies. Details of potential management strategies would be developed at the time they are needed to ensure that the most effective approach is identified. The potential impacts of these actions are included in chapter 4 of this plan.

Indicator Topic: Archeological and Cultural Resources

Indicator: *Number of reported or discovered damage to archeological sites and cultural features related to equestrian use*

Thresholds:

- No more than one reported or documented incident of damage to archeological sites related to equestrian use annually.
- No more than one reported or documented incident of damage to cultural features (primary interpretive features (e.g., Gouedy Trading Post Complex, Colonial Village of Ninety Six, Star Fort, Stockade Fort and Related Features, etc.) related to equestrian use annually.

Rationale: Archeological, historic, and cultural sites are nonrenewable and irreplaceable resources. Therefore, this indicator is important to monitor. There is zero tolerance for damage to cultural resources, and therefore the threshold is set at one so that park managers can and will be prompted to take action when the first incident of damage occurs. There can be a direct correlation between equestrian use and damage to specific archeological sites and cultural resources. This indicator serves as an educational tool to inform equestrian users about the resources and their impact on them. It can be a feedback loop to communicate to stakeholders about the amount of damage related to that user group's recreation. Monitoring for this indicator would include documenting incidents at off-trail sites, which would be an indication that equestrian users are going off-trail. This will allow park managers to understand the integrity and impact to the resources resulting from equestrian use.

Artifacts, known archeological sites, and new archeological sites are often exposed and/or discovered by trail activity or user-caused erosion. Any reported archeological site or exposed cultural feature would require immediate management review. Any discovered archeological site would undergo an archeological survey and assessment. A survey and assessment would document the site's characteristics, location, condition, integrity, and evaluate eligibility of the resource for listing in the National Register of Historic Places along with next steps for archeological resource management as identified under the 1988 amendment to the Archeological Resources Protection Act. Depending on this determination, other management actions such as trail hardening could be chosen and tailored to specifically address how the resource is affected by trail use and condition.

Monitoring: The park will monitor this indicator in a variety of ways. Park personnel such as law enforcement as well as equestrian users will submit incident and case reports. Park staff and/or visitor reports will prompt formal archaeological condition assessments conducted by a professional NPS archeologist. The park is already measuring changes in conditions through condition assessments and the Facility Condition Index (which rates the condition of a facility or asset at a particular point in time using a numeric rating system) from Facility Management Software System on 5-year intervals. Archeological sites are currently inspected at 5- and 10-year intervals depending on the resource.

Existing Data:

- Archeological Sites Management Information System reports and cyclic condition updates
- Facility condition assessments
- 5- and 10-year archeological assessments
- Non-formal visual assessments, exposure

Management Strategies and Mitigation Measures:

- Continue formal monitoring at 5- and 10-year intervals and have a higher frequency of condition assessments completed in sensitive areas with high visitor use (as recorded by trail cameras).
- At first occurrence of an incident, the park will increase informal monitoring frequency.
- Educate visitors on the sensitivity of resources and the need to protect historical and cultural sites. This could be completed through educational signs or directional signage for visitors to stay on trails.
- Target education to equestrian users that are accessing areas with historical and cultural sites. This could be completed throughout educational pamphlets and/or waysides focusing on historical horse use at the site.
- Increase trail watch by using predominant user group as site stewards.

- Establish more regular communication mechanisms to understand traditional cultural resource locations and activities.
- Conduct an archeological site testing and make recommendations.
- Cultural resource experts conduct damage analysis.
- Prioritize documentation of resources in high visitor use areas. Criteria might include trail location, visibility, current integrity, site boundary, and previous assessments. Trails could have buffer zones from 0-20 meters where resources are considered on trail 20–40 meters, and 40–60 meters where resources are considered off-trail.
- Increase ranger presence or patrol.
- Increase enforcement and documentation.
- Create physical barriers.
- Conduct baseline assessment and survey prior to opening new trails.
- Maintain an updated GIS map of surveys and assessments that occur to enhance monitoring efforts and locate known sites for new trail considerations, signage, public events, and others.
- Reroute trails and examine potential temporary closures. Area closures would only be considered after a range of management strategies have been implemented and have not been effective.

Indicator Topic: Visitor Complaints

Indicator: *Number of complaints related to trail use*

Threshold: No more than three validated complaints per month in the same area.

Rationale: The rationale for this indicator is directly related to the desired condition that visitors would have high-quality experiences in settings with a low visitor density without crowding, congestion, or visitor conflict. This indicator is important to maintaining and improving the quality of the visitor experience and informing visitor capacity. As a part of monitoring this indicator, the park has the ability to document illegal activity such as dogs off leash, hunters, and motorized vehicles, providing important information about inappropriate uses within the park. This indicator provides information about trail conditions and informs what high-quality visitor experiences are related to equestrian use. Information from this indicator will also inform park staff about new visitor opportunities or where additional wayfinding information is needed.

Monitoring: The park will document complaints from visitors including time, location, and type of complaint. This documentation system could take many forms (e.g., visitor use forms that will provide feedback to park managers about visitor experiences, opportunities, and issues). The park will also explore new ways to seek input from visitors. This monitoring provides feedback that is important for managers to ensure desired conditions are maintained.

Management Strategies and Mitigation Measures:

- Develop a public information effort about the desired conditions for the park, and provide information about the actions the park is taking to achieve those conditions. Information could include appropriate visitor behaviors, including proper trail etiquette and the rationale behind not allowing particular activities or discouraging specific behaviors. This information could be distributed through direct visitor contact, park publications (online and printed), and wayside exhibits.
- Investigate and validate the complaint and determine if it requires further action. If safety related, take action immediately.

- Work with the affected users to understand the root of the conflict; create understanding between users; if possible, change future behavior; and resolve the conflict.
- Create and post trail signs or informational brochures explaining trail etiquette (e.g., who yields to whom).
- Consider limiting a particular type of use on certain trails, segregating uses, or changing the design of existing trails to prevent repeat conflicts.
- Develop a permit system for trails to help minimize user conflicts related to the amount of use.

Indicator Topic: Trail Conditions

Indicator: *Change in trail conditions (ruts, erosion, width, depth, tread)*

Threshold:

- No more than 10% increase in any of the following areas: eroded areas, trail width, and/or trail depth at any place on the trail.
- No more than 1% increase in any of the following areas: eroded areas, trail width, and/or trail depth for historic roadbeds.

Rationale: At the park, this indicator is intended to protect natural and cultural resources as well as visitor experiences. Erosion on trails is currently leading to increased damage to archeological resources and the cultural landscape. For instance, in some places there are unknown cultural resources that could be damaged by equestrian use in unauthorized areas. Deteriorated trail conditions can lead to a loss of soil and increase the potential for damage to cultural resources. Deteriorating trail conditions also displace visitors, leading to an increase in visitor-created trails into unauthorized areas.

This indicator will support an increased understanding in the relationship between the amount of use and impacts to resources. Monitoring will also alert park managers as to when trail conditions are approaching unacceptable levels and inform future management. To protect natural resources, this indicator will monitor when poor trail conditions can impact water quality and vegetation and off-trail use can unintentionally support the migration of soils, invasive species, and pests. Equestrian use during or immediately after weather events can contribute to the channeling of water and can create resource concerns. Regarding visitor experiences, degradation to trail surfaces affects the visitor experience by creating unsafe trail conditions because of ruts, tripping hazards, and root exposure. In addition, degraded trails can contribute to visitor-created trails, which are also a concern for resource management.

Monitoring: Park staff is committed to 100% review of the trails—once a year—to include an inventory and condition assessment. Provided below is the park staff's outline for monitoring trail conditions. In the future, the park could leverage partnerships and volunteers to document conditions on trails to determine when and where trail condition assessments are completed and needed.

Park Staff Outline—

- Establish baseline conditions (include user-reported incidents).
- Initiate an annual trail assessment and semi-annual trail assessment, if needed, for trails of concern. Document trail condition assessments in spring, and assess areas of concern in fall.
- Conduct periodic patrols of trails.
- Continue to close trails after the precipitation levels noted below and visually inspect trails prior to opening for public use. The visual inspection will guarantee that no further channeling and/or rutting has occurred and that archeological sites have not been exposed.
    - 1" — trails will be closed for 24 hours
    - 1 – 2" — trails will be closed for 48 hours
    - 2+" — trails will be closed for approximately 72 hours or more, depending on ensuing weather events.

Management Strategies and Mitigation Measures:

- Trail construction, repair, and rehab will follow US Fish and Wildlife Service trail standards using volunteer and/or friends groups to assist the park with trail maintenance.
- Strategies to manage trail widening:
    - Establish trail borders with rocks, logs, or fencing.
    - Advertise areas of muddiness, erosion, and excessive rockiness to contain the lateral spread of traffic along particular areas.
    - Encourage visitors to stay to the center of the trail.
    - Encourage equestrian users to ride single file in areas where trail widening is occurring.
    - Limit equestrian use group sizes, break up groups, or create a one-way flow of use.
- Strategies to manage excessive soil loss:
    - Hardening treads through the application of surface amenable to horse use and accounting for archeological resources.
    - Outsloped treads (i.e., the tread is lower on the outside or downhill side of the trail to encourage natural water drainage).
    - Drainage control structures.
    - Sustainable (re)design.
    - Installing boardwalks and structures.
- Limit equestrian use temporarily or permanently to alleviate trail degradation.
- Potential temporary or permanent trail or area closures.
- Reroute, close trails, or harden trails to protect sensitive resources or to prevent long term-damage to trails, habitats when excess water is present, and improve visitor safety and experience.

Indicator Topic: Invasive Species

Indicator: *Number of new occurrences of invasive species (new and old) along trails in equestrian areas*

Threshold:

- No more than one <u>new</u> occurrence of a new species if it is an ecosystem modifying species or species that pose threats to human health and safety on the equestrian trail system.

Rationale: Horses can introduce new species and spread already existing invasive species; some feed can introduce new exotic species to the park. The occurrence of a new species is identified as the

priority indicator over the spread of invasive species because the park would proactively identify new occurrence prior to spreading. This indicator focuses on equestrian use but would be used to monitor more broadly any new occurrence of a new species on the equestrian trail system.

Monitoring: Currently, the National Park Service is periodically monitoring for invasive species and treating known areas containing privet, kudzu, and wisteria. This will continue on a quarterly basis. The National Park Service will also begin periodically sampling the feed of equestrian users. There is a need to identify the current spread of invasive species so that identifying new occurrences is easier.

Management Strategies and Mitigation Measures:

- Provide education related to invasive species (e.g., identification, on-site impacts) and possible vectors associated with equestrian use (e.g., in the trailer, hay), leverage site stewards.
- Provide early detection workbooks to visitors from Southeast Exotic Plant Management Team. Encourage visitors to report invasive species occurrence to park staff.
- Improve partnerships and collaborative action plans with other entities concerned with invasive species; leverage site stewards.
- Restore disturbed areas and reintroduce native species.
- Remove nonnative species via spraying, cutting, and chemically treating stumps, and any other manual or biological control methods.
- Establish Special Ecological Areas to exclude invasive plants from designated areas.
- Encourage and/or require weed-free feed for all equestrian users.
- Increase trail patrols, inspections, and subsequent maintenance. Encourage on-trail travel.
- Provide wash stations to wash shoes and gear with signs explaining the purpose.
- Temporarily or permanently close areas if invasive species are detected to decrease the risk of further spread.
- Reduce use levels.

Indicator Topic: Parking Lot Congestion

Indicator: *Number of cars in the equestrian parking lot at one time*

Threshold: No more than five vehicles with trailers in the equestrian parking lot at one time.

Rationale: The visitor experience begins before arriving at the park and continues long after the visit to the park concludes. Parking lots contribute to the quality of visitor experience, including finding a space to park, safety of visitors and horses, and the level of access to the park. This parking lot is designated for equestrian use only. Monitoring this indicator at the equestrian parking lot will ensure that the desired condition for safe, convenient, and sustainable access to park resources and experiences is maintained. Monitoring of this indicator would also provide park staff additional information on current equestrian use, duration of visit, and after-hour use. The parking area is currently visible from the road and there are some concerns for traffic issues. Monitoring the level of use at the site to ensure that no more than five vehicles with trailers are in the parking lot at one time will alleviate some of the traffic and safety concerns currently present at the site. There are also viewshed concerns for the parking area.

Monitoring: The park currently has a pneumatic tube counter at the entrance to the parking lot and also tracks the number of reports of vandalism or break-ins. In the near future, the park could install an iron ranger to collect visitor reports. The park could also install trail cameras that date- and time-

stamp photos or conduct periodic observational monitoring to further understand use at the equestrian lot. Monitoring of this indicator using existing methods and employing new techniques will provide important information to managers about existing use and potential issues.

Management Strategies and Mitigation Measures:

- Enforce parking and access restrictions, as well as site management (signage, delineation of spaces, curbing, paving, revegetation, blockades, fences) to resolve over-parking and visitor-created parking.
- Increase enforcement of endorsed parking only and during after-hours.
- Install permanent gate.
- Consider electronic gate access.
- Require specific-size horse trailers.

VISITOR CAPACITY

Overview

Visitor use management is the proactive and adaptive process of planning for and managing characteristics of visitor use and its physical and social setting using a variety of strategies and tools to sustain desired resource conditions and visitor experience. Another component of the visitor use management framework is the identification of visitor capacities. Visitor capacity is a component of visitor use management defined as the maximum amount and types of visitor use that an area can accommodate while sustaining desired resource conditions and visitor experiences consistent with the purpose for which the area was established. Visitor capacities will be used to inform and implement the management strategies selected as part of this plan. The National Park Service is legally required to identify and implement visitor capacities for all areas of a park unit per the National Parks and Recreation Act of 1978 (IVUMC 2016).

The primary goal of this effort is to preserve the park's fundamental resources and values. By managing the maximum amounts and types of visitor use, the park can help ensure that resources are protected and that visitors have the opportunity for a range of high-quality experiences. Through this planning effort, the park has an important opportunity to proactively safeguard the highly valued experiences and resources throughout the park unit. For some uses, current use levels are resulting in adverse impacts to resources and experiences. In these cases, the visitor capacity has been identified such that these conditions are corrected as this plan is implemented. For other uses, current use levels do not appear to be impacting experiences or resources, and therefore the visitor capacity has been identified to be at or near current use and is based on the limiting attributes described at the site. This section outlines the considerations and process used to identify and implement visitor capacity for key destinations and for different use groups.

Guideline 1: Determine the analysis area. Following guidance from the Interagency Visitor Use Management Council, the level of analysis that occurs during visitor use management planning and visitor capacity determination is determined on a sliding scale depending on the complexity and context of the plan. During the planning process, it was determined that the primary area of the unit that would benefit from a visitor capacity is the trail system.

Guideline 2: Review existing direction and knowledge. During this step, the desired conditions, indicators, and thresholds were reviewed, with particular attention to conditions and values that must be protected and are most related to visitor use levels. An overview of visitor use issues and

current use levels for each key area can be found in "Chapter 3: Visitor Use and Experience Affected Environment."

Guideline 3: Identify the limiting attribute(s). Given the desired conditions for equestrian use at the park, park staff identified several limiting attributes, including the archeological, cultural, and historic sites. Equestrian use trails are located proximate to these resources and would constrain the amount of visitor use the area could sustain. The length of the trail system was also identified as a limiting attribute. To sustain a high-quality visitor experience, the limited mileage trail system can only handle a certain number of equestrian users on the trail.

Guideline 4: Identify capacity. While actions related to each of the alternatives could require a visitor capacity that varies by alternative, those actions would contribute to minimal differences, and therefore, for ease of implementation, visitor capacity would not vary by alternative. This is the case for all the alternatives except for C, which is specifically addressed below.

Park staff and interdisciplinary specialists determined that the visitor capacity for alternatives A and B could increase for both equestrian and pedestrian use from current use levels while achieving desired conditions. Using a nine-month average of visitor use from 2015, it was estimated that 191 vehicles per month use the old / previous equestrian lot. The parking lot is the primary mechanism for visitor access to the trail system. Approximately half of the 173 vehicles were attributed to equestrian use (about 90 vehicles). The park offers 22 open riding days per month or five days a week, excluding weather events. To determine the number of users per day, the estimated 90 equestrian-related vehicles in a month distributed throughout 22 open riding days averages to about four vehicles per day. Group size of equestrian users is typically two to four equestrian users per vehicle, although some vehicles with trailers can fit up to five horses. This means that between 45 and 85 equestrian users would be in the park on an average week, with higher use on the weekends. Most likely, the park estimates between 15 and 25 equestrian users per weekend day.

Pedestrian use is approximately three to four times more frequent than equestrian use. The park estimates that approximately 75 people a day could use the equestrian trail system on foot. Pedestrians do have other trail opportunities outside of the equestrian trail system. At the park, the parking designated for equestrian use only facilitates access to the equestrian trail system. The parking lot can fit on average about five vehicles with trailers that could hold up to five horses, accounting for 25 equestrian users at one time on the trail system. In addition, infrequent use can occur when equestrian users do not park in the lot but ride in from off-site.

Given desired conditions and the actions in the alternatives, current use levels at about 25 equestrian users per weekend day and 75 pedestrians is acceptable and was deemed to be below the levels the equestrian trail system could sustain. Because pedestrians have other trail opportunities outside of the equestrian trails, the visitor capacity focuses more on providing distinct opportunities for equestrian users while acknowledging pedestrian use is important as well. Further, the park believes that the trails can accommodate additional visitor use levels while achieving desired conditions and would best be able to manage a visitor capacity that accounted for the number of people at one time rather than in any given day.

Under alternatives A and B, the visitor capacity per day for equestrian use would be 30 equestrian users at one time including their horses, while the visitor capacity for pedestrian use would be 20 people at one time (PAOT). These visitor capacity numbers combine for a total trail capacity of 50 visitors at one time. This means that the number of equestrian users and their horses as well as pedestrians would be slightly more than 10 users per mile if all users groups were present at one time.

The most relevant indicators to monitor related to monitoring visitor capacity for equestrian and pedestrian use on the trail system are the *change in trail conditions, number of cars in the parking lot,* and *number of new occurrences of invasive species along trails in equestrian areas.*

The visitor capacity for pedestrian use in alternative C would be the same as A and B (20 PAOT); however, equestrian use would be zero, as the plan calls for the closure of equestrian trails in that alternative. The most relevant indicators to monitor related to monitoring visitor capacity for equestrian and pedestrian use on the trail system are the *change in trail conditions and number of cars in the parking lot.*

Park staff identified several strategies for implementing visitor capacity that would be used in combination with actions in the selected alternative.

- Leverage assistance from site stewards, state department of natural resources, and equestrian users.
- Implement permit system (Special Use Permit).
- Introduce ranger presence or patrol and work with volunteers to monitor a suite of indicators, including number of equestrian users in addition to invasive species and trail conditions.
- Increase enforcement and documentation, including enforcement of permit system such as checking of permits on trails, unauthorized parking, and group size.
- Create physical barriers to delineate parking and trails.
- Reroute trails and examine potential temporary closures. Area closures would only be considered after a range of management strategies have been implemented and evaluated for effectiveness.
- Reduce size of parking lot.
- Consider modifications to gate access (e.g., reservation system could have access code to enter the parking area tied to the permit).
- Provide informational signage to inform visitors of existing threats and impacts to resources.
- Delineate and sign authorized parking spaces.
- Modify parking lot to be one-way.
- Modify trails to be one-way.
- Require daily use fees.
- Install horse turnstile.

NPS Operations and Management

NPS decision makers and the public must consider the costs and advantages of various alternatives, including the no-action alternative, to make a relevant comparison among the alternatives (table 1).

The costs presented here are estimates for comparison purposes only and are not to be used for budgetary purposes or implementing funding requests. If and when the actions are implemented, actual costs would vary. Specific costs would be determined in subsequent, more detailed planning and design efforts.

The estimates in this section include annual operations and maintenance and one-time net construction costs to implement the actions under alternative B over the next five years. No new construction costs are anticipated for alternatives A or C. No new full-time equivalent staff is anticipated for any of the alternatives.

Table 1. Staff and Cost Estimates

Costs	Alternative A	Alternative B	Alternative C
Annualized Costs for Operation and Maintenance (O&M) of Trails = ~$3,500 per mile	N/A	N/A	N/A
Existing 4.5 miles of equestrian / pedestrian trails	$15,750	$15,750	$15,750
Parking Lot Improvements (Kiosk, automatic gate, trash cans)	N/A	$1,600	N/A
Total Annual O&M Costs	$15,750	$17,350	$15,750
Capital Expenditures	N/A	N/A	N/A
Kiosk, gate, trash receptacles Single swing pipe gate: $5,000 Kiosk: $23,000 Trash Can: $2,000 (per)	N/A	$30,000	N/A
Total Costs (O&M and Capital Expenditures)	$15,750	$47,350	$15,750

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED

While developing alternatives, it became evident that certain alternative concepts or actions were not feasible and were dismissed from further analysis in this plan. These alternative concepts or actions, and the reason for their dismissal, are described in table 2.

Table 2. Alternatives and Actions Considered but Dismissed from Further Analysis

Description of Action	Rationale for Dismissal
Reopening the 96 Creek Trail / Bridle Trail and expanding the Northern Boundary Trail to include the entire boundary.	This trail must remain closed because of the presence of sensitive cultural resources—neither the location nor the nature of these can be specifically identified.
Allowing equestrian use on the Southern Boundary Trail and South Fire Road.	There are cultural resource sites located within the vicinity of the Southern Boundary Trail and South Fire Road. Until Phase I testing is completed, the boundaries of the sites are unknown, and therefore it is unknown what the impacts to the resources might be. Furthermore, allowing equestrian use in this part of the park could have the unintended consequence of increased use on the Charleston Road, and given current staffing and LE coverage, the park may not be able to mitigate this impact.

Description of Action	Rationale for Dismissal
Building .5 miles of new trail that would join the Southern Boundary Trail to Fire Road 6 and the Gravel Service Road.	This trail segment would have to be built through a sensitive wetland area, and would have adverse environmental impacts. Furthermore, an additional .5 miles of trail would not greatly extend the riding time and therefore, would not appreciably improve the visitor experience
Installing an automatic, electronic gate, similar to the existing one in the park located by the visitor center.	This type of gate would be useful at the equestrian lot if the park intended to expand riding hours after 5:00 p.m. At this time, the park has concerns over visitor safety if users are allowed to ride after closing hours when no park staff is on duty.
Allowing equestrian use on any sections of the four historic roads (including Cherokee Path, Island Ford, Keowee-Whitehall, and Charleston Roads).	Equestrian use is currently not allowed on the historic road traces, and the core battlefield is also restricted. In the past, the park had seen increased illegal equestrian use on the historic roads, which can contribute to erosion. Furthermore, improper equestrian use has occurred and caused impacts to the field adjacent to the Stockade Fort as well as the stockade ditch around the fort. Because of the prior incidents of and potential for future damage to the park's historic resources as a result of equestrian use, allowing equestrian use on the historic roads was dismissed from further consideration.

If Phase 1 of the archaeological testing is completed on the Southern Boundary trail and South Fire Road and it is determined that there is no potential for adverse impacts to cultural resources in the area, the park could revisit allowing equestrian use in this part of the park. However, expanding equestrian use on the park's trail system would require staffing and funds that the park currently does not have. If a Friends or volunteer group is formed that commits to regular upkeep of the trails, the park could reevaluate this action. The park would need to conduct additional compliance and research ways to lessen the environmental impacts of building .5 miles of new trail in or around a wetland area, thereby possibly being able to extend the trail system.

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Chapter 3

Affected Environment

Boating on Star Fort Pond. NPS photo.

Field school. NPS photo.

Field overlooking Star Fort Pond. NPS photo.

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CHAPTER 3: AFFECTED ENVIRONMENT

INTRODUCTION

The "Affected Environment" chapter describes the resources that could be affected as a result of implementing any of the alternatives. The descriptions serve as an account of the baseline conditions against which the potential effects of the proposed actions are compared. The resource topics presented in this chapter and the organization of the topics correspond to the resource impact discussions contained in "Chapter 4: Environmental Consequences." The following resources are included: ethnographic resources, archeological resources, cultural landscapes, soils, vegetation, water quality, and visitor use and experience.

POTENTIALLY AFFECTED RESOURCES

Ethnographic Resources

Ethnographic resources are landscapes, objects, plants and animals, or sites and structures that are important to a people's sense of purpose or way of life. These people are the contemporary park neighbors and ethnic or occupational communities that have been associated with a park for two or more generations (40 years) and whose interests in the park's resources began before the park was established. The National Park Service uses several types of studies and research to determine the extent of ethnographic resources in a particular park. The most comprehensive background study and the ethnographic overview and assessment both review existing information on park resources traditionally valued by stakeholders. The information comes mostly from archives and publications. Interviews with community members and other constituents—often on trips to specific sites—supply missing data. This study also identifies the need for further research. No ethnographic overview and assessment has been done for the park; however, park staff have identified potential or suspected ethnographic resources, including a possible African-American cemetery, American Indian sites, artifacts associated with African Americans and American Indians, and possible slave quarters at the Gouedy plantation complex. The unknown burial ground located along Henley Creek contains the unidentified graves of approximately 50 people. It is located north of the Ninety Six Creek trail/ Bridle trail and west of the Charleston Road. In 2015 and 2016, prior to when the park closed the area to equestrian use, the park saw increasing equestrian use and resulting damaging impacts in areas of the Gouedy plantation complex and Henley Creek Cemetery. The Gouedy complex and Henley Creek Cemetery would continue to be closed for equestrian use under all of the proposed alternatives. Since an ethnographic assessment has not been prepared for the entire park, it cannot be ruled out that the proposed alternatives would have no impact on the ethnographic resources; thus, this topic has been retained for impact analysis.

Archeological Resources

The park has 41 known archeological sites that have been listed in the NPS Archeological Sites Management Information System database. Thirty-seven of the sites are listed in "good" condition, one is listed as "fair," and three have not been evaluated because the resources are not located on park property. The park's pre-eminent archeological resources include the remains of Star Fort, the village of Ninety Six, the reconstruction of the Stockade Fort, the communication trench that ran between the town of Ninety Six, the Stockade Fort (Holmes Fort), and the Star Fort, the Gouedy settlement and trading post, the Island Ford Road/Charleston Road, and the Cherokee Path.

The park has completed some important archeological research and has several management documents (e.g., the 2003 archeological overview and assessment and a 1996 archeological study). Additional studies, however, are needed to determine exact locations of the Gouedy settlement, possible slave quarters that might have existed there, the trading post, structures that comprised the village of Ninety Six, unknown military burial sites, trenches at the Stockade Fort, Greene's Camp, and the town of Cambridge. The park has requested funding for several archeological surveys to locate the resources listed above, but no funds have yet been received.

On June 6-10, 2016, Southeast Archeological Center (SEAC) technicians surveyed the trails that are currently open to equestrian use and would continue to be under alternative A. They also surveyed the equestrian parking lot area. They found that "the existing trail routes were not significantly impacting any archeological sites, and only three isolated finds were recovered during the subsurface testing. The Ninety Six National Historic Site may proceed with its plans to reopen the trails and develop the areas tested for new trails and parking. Though technicians were not able to complete the originally planned metal detecting survey, large portions of the new trail cuts had been surveyed previously by Prentice in 1996 (Prentice 2002), and the remaining portions are well outside of the core battlefield area" (verbatim from the NISI 2834 Trip Report).

Cultural Landscapes

The June 2009 cultural landscape report for the park documented a series of seven discrete character areas that share similar traits or are unified by land use, topography, vegetative character, or historic associations. The character areas potentially affected by the proposed alternatives in this plan include the Successional Woodland and the Star Fort Pond character areas. The following descriptions are from the cultural landscape report.

The Successional Woodland character area encompasses a range of forest communities as well as prehistoric and historic archeological sites, path and road traces, and physical remnants of the 1751 Hamilton Survey Line. Star Fort Pond is a manmade, publicly accessible, recreational water feature primarily used for fishing. The pond's margins are maintained in mown turf. The current equestrian trails occur in these two character areas.

Soils

The park is located in the Piedmont of South Carolina. Soil series within the park include Chewacla, (fine-loamy, mixed, active, thermic, Fluvaquentic Dystrudepts), Coronaca (fine, kaolinitic, thermic, Rhodic Paleudalfs), and Mecklenburg (fine, mixed, active, thermic, Ultic Hapludalfs). Chewacla soils are typically located on alluvial land adjacent to streams and are poorly to moderately well drained. Coronaca soils typically occur on 2% to 10% slopes, are moderately to well drained and represent weathered hornblende, gabbro, or diorite. Mecklenburg soils are deep, well drained, and occur on gentle to steep slopes with red and brownish-yellow subsoils (NRCS 2006). Together, these three series and their associations comprise 72% of the soils in the park (NRCS 2006). Soils within the Piedmont have suffered from severe erosion since European settlement, and the region retains little topsoil. They are associated with gently sloping, narrow- to medium-width ridges and short side slopes along streams. Most of the soils in Greenwood County have a loamy surface and are well suited for agriculture, including row crops and pasture (Wiss, Janney, Elstner Assoc. 2009). Controlling erosion related to equestrian use on the trails is the main management concern associated with these soils.

Vegetation (Including Exotic, Nonnative, and Nuisance Species)

The park is associated with the oak-hickory-pine Southeastern mixed forests that are common within the Piedmont Province of South Carolina. In general, the region has been heavily influenced by cultural activities such as agriculture and logging. Fire suppression has also affected the composition of the area's vegetation communities. In addition, the composition of woodlands varies from site to site in response to local soils, available moisture, elevation, slope, and aspect. Existing plant communities are a patchwork of stand types that reflect past land use history. Within the park, there are open fields maintained through mowing and old fields in the early stages of succession. A vascular plant inventory conducted in 2003 identified 365 vascular plant species, varieties, or subspecies associated with 18 distinguishable vegetation communities within the park. Of these, seven are naturally occurring, while 11 are human-modified or successional. Two were described as natural areas of unusual rarity, including the southeastern coastal plain flat terrace forest that includes canebrake and the Southern Piedmont oak bottomland forest. (Wiss, Janney, Elstner Assoc. 2009). The oak bottomland forest is comprised of species such as swamp white oak, willow oak, sweetgum, green ash, red maple, river cane, and northern spicebush. The equestrian trails wander through forested areas and meadows and have a variety of plant species within the vicinity.

The invasive species that present the biggest threat to the ecological health of the park and are the focus of control measures conducted by park staff, regional exotic species removal crews, and volunteers include kudzu (Pueraria montana var. lobata), wisteria (Wisteria floribunda and W. sinensis), bamboo (Phyllostachys spp.), thorny olive and silverberry (Elaeagnus umbellata and E. pungens), Japanese honeysuckle, European privet (Ligustrum vulgare, L. sinense), Japanese stiltgrass, mimosa (Albizia julibrissin), Johnson grass (Sorghum halepens), and chinaberry (Melia azedarach). These invasive species are found in association with most of the plant communities within the park. A relatively recent threat is cogongrass (Imperata cylindrica) (Wiss, Janney, Elstner Assoc. 2009).

Water Quality (Water Resources and Wetlands)

The park drains from the high point near its northwestern corner to the drainage way that exits beneath Highway 248 to the southeast, with all overland flow entering Henley Creek before leaving the park. In addition to Henley Creek, two named streams—Spring Branch and Tolbert Branch—and various unnamed tributaries extend through the park. Holmes Branch, which parallels the western edge of the park's smaller parcel, also drains into Henley Creek. Henley Creek, Spring Branch, and Tolbert Branch conjoin in the southern third of the park. The 100-year floodplains for Henley Creek and Tolbert Branch within the park average between 600 and 700 feet in width and 10 to 15 feet above the streambeds. Beyond the park's boundaries, Henley Creek empties into Ninety Six Creek, which eventually drains into the Saluda River. On historic maps, Henley Creek is often erroneously labeled as Ninety Six Creek. (Wiss, Janney, Elstner Assoc. 2009).

The park falls within the Saluda hydrologic cataloging unit (HUC 03050109), which is part of the Santee hydrological accounting unit (HUC 030501). The water resources of the park are classified as Category Three by the Inventory and Monitoring (I&M) monitoring plan, meaning that they lack a significant role in the aesthetic or establishment of the park and contain no rare aquatic species. The Cumberland Piedmont Inventory & Monitoring Network has been conducting alternate-year, quarterly water quality monitoring at Ninety Six National Historic Site since October 2004, and added *E. coli* monitoring in 2005. The network monitors four sites, Henley Creek at the west (upstream) and east (downstream) boundaries of the park, Tolbert Creek at the western park boundary, and Star Fort Pond. These sites represent the permanent stream where they enter and exit the park and the lake; thus, the potential impacts on the water quality from equestrian use could be

observed. However, during runoff-producing rainfalls, it is common to see values in excess of 1,000 MPN/100 ml, and at times exceeding the method limit of 2400 MPN/100 ml. The network interprets these high bacteria values to nonpoint source agricultural runoff.

Streams, rivers, ponds, and lakes are considered wetlands from the edge to a depth of 2 meters per the Cowardin system for classifying wetland habitats. (Cowardin et al. 1979). Within the park, most of the streams and their bottoms (in their entirety) are considered wetlands. For instance, Star Fort Pond—from the shore to two meters deep—is classified as a wetland habitat. National Wetland Inventory maps indicate the possibility of four wetlands present within the park. Upon completion of field investigations, 46 wetlands had been located and characterized. These wetlands totaled an estimated 14.7 acres, with the average wetland size being approximately 0.32 acres. Based on the Cowardin classification system, 32 of the wetlands were palustrine, forested wetlands dominated by deciduous trees (PFO1). Of these, 14 were seasonally flooded (PFO1C), 11 were temporarily flooded (PFO1A), six were seasonally flooded/saturated (PFO1E), and one was semi-permanently flooded (PFO1F). Non-forested wetlands included two scrub-shrub wetlands having persistent vegetation that was seasonally flooded (PSS1C) and two palustrine emergent wetlands having persistent vegetation. One of these was temporarily flooded (PEM1A), and the other was seasonally flooded (PEM1C). The remaining 10 sites were considered to be palustrine open-water wetlands (POW). Based on the Hydrogeomorphic classification system, 29 of the sites were riverine wetlands, 12 were depressions, four were slope wetlands, and one was considered a lacustrine fringe wetland. (Morgan, Peterson and Roberts 2006).

Currently, equestrian use occurs on trails away from the majority of wetland areas. Pedestrian trails run parallel to sections of Tolbert Branch and Henley Creek west of the Charleston Road. Equestrian users are allowed on the trails in the northern part of the park and alongside Star Fort Pond. Because the water drains from the northeast corner of the park to the southeast, equestrian use has the potential to impact the park's water resources.

Visitor Use and Experience

Introduction. This section describes elements of visitor use and experience in the park that may be affected by the management alternatives. The description of these elements is based on the best professional judgment of NPS staff and public scoping for this plan.

The following visitor use and experience elements will be discussed:

- Visitor access, information, and circulation
- Diversity of visitor experience and opportunities
- Quality of the visitor experience

Information about the above elements corresponds to subtopics analyzed in the "Environmental Consequences" section (chapter 4) and the type and level of impacts addressed.

Visitor Access, Information, and Circulation. The park has experienced increasing visitation since 1985 (figure 3). In 1985, the number of annual recreation visitors for the entire park was 17,908. In 2017, it was 113,103.

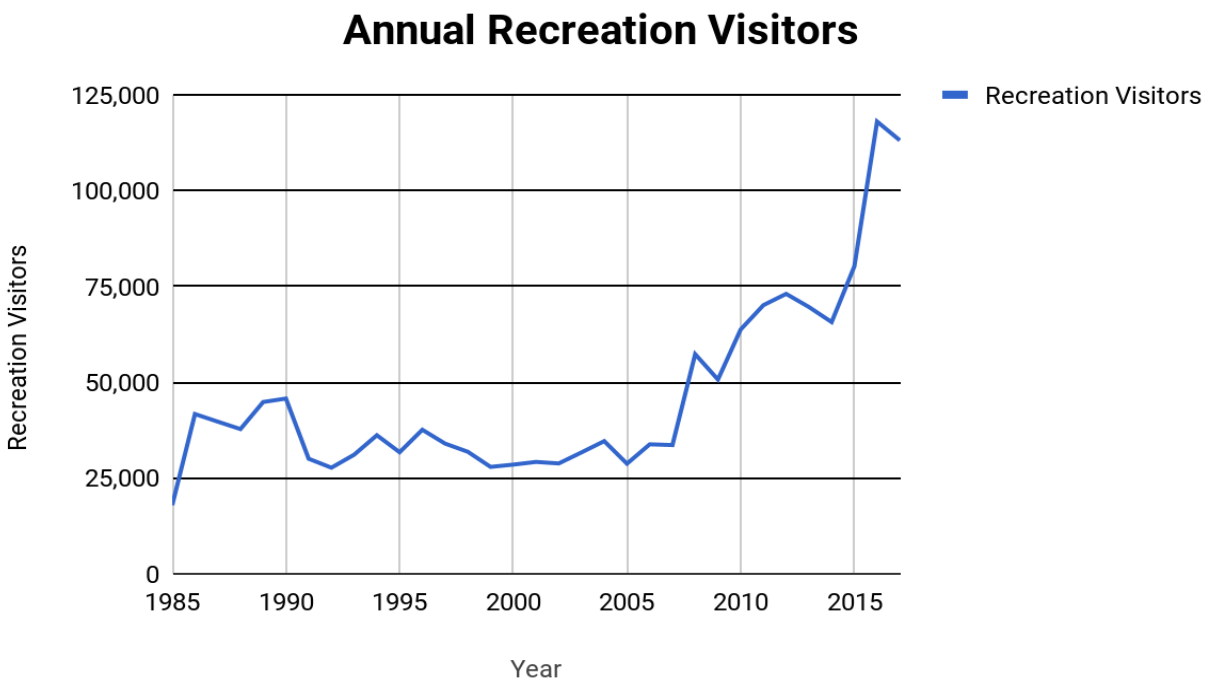

FIGURE 3. ANNUAL RECREATION VISITS TO NINETY SIX (1985–2017)

In February 2017, equestrian users began parking at a lot on the east side of the park, where an inductive loop traffic counter is installed across the entrance / exit. The traffic count is divided by two to adjust for vehicles entering and exiting the park. The adjusted traffic count is reduced for the number of nonreportable vehicles (8 per month). The reduced traffic count is multiplied by the Person Per Vehicle multiplier of 2.2. Prior to 2017, equestrian users would park on the west side of the park, adjacent to Highway 248 and just south of Louden Road. The park calls this area "Lee's Trenches" (figure 4).

The park began collecting trail data use in September of 2017 to gain a sense of how many visitors are using the trails and to assess what type of uses (pedestrian or equestrian) occur (figure 5). In the 6.5 months the park collected this data, trails were closed to equestrian use a total of 31 days because of rainfall amounts. Pedestrians were still allowed to access the trails on these days. Despite this, it is evident that pedestrian use of the park trails accounts for a much larger percentage of visitor use than equestrian use.

Diversity of Visitor Experience and Opportunities. Anecdotal information from comments during public scoping sessions (note—this proposal did not receive any comments on the NPS Planning, Environment and Public Comment [PEPC] website) provides some ideas about the current equestrian user experience. For the most part, equestrian users park at the equestrian lot on the east side of the park and then access the trails from there. A few equestrian users access the park's trails by riding directly from their homes (located adjacent/near to the park). Once in the park, equestrian users can access approximately 5 miles of trails open to equestrian use. The park has approximately 10 miles of trails. According to the public use counting procedures for the park, most recreational visitors spend an average of 1.5 hours exploring the park. The park has installed carsonite signs along the trails and has marked trees with orange paint to indicate whether horse use is allowed.

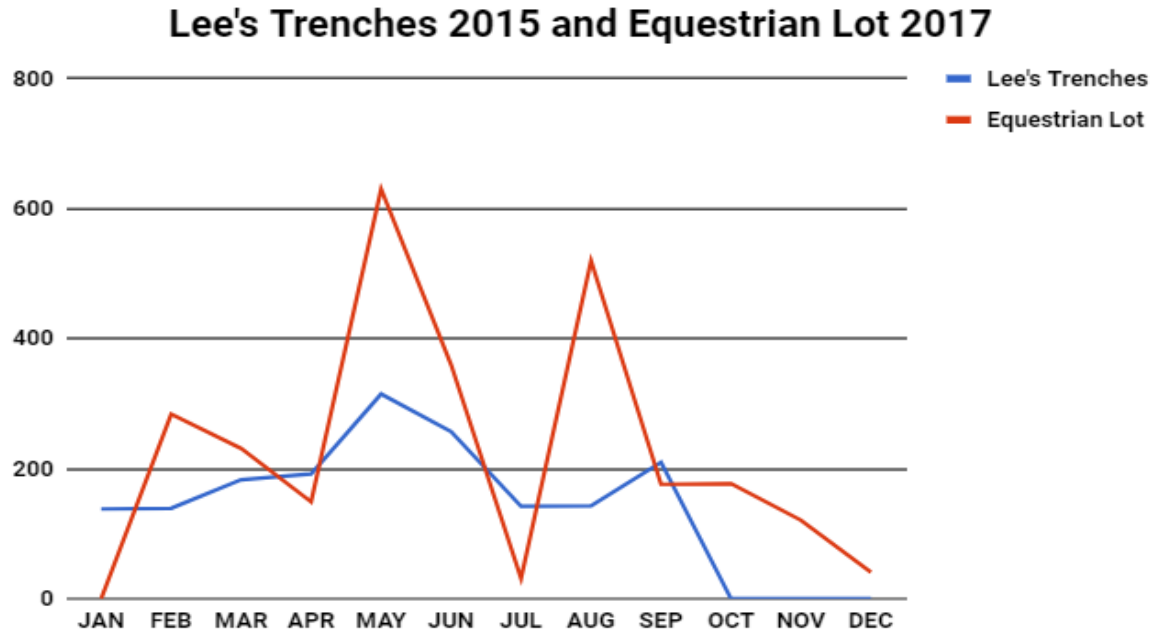

Figure 4. Traffic Counts at Equestrian Parking Areas (Note: Lee's Trenches and equestrian use on the trails was closed from October – December 2015 because of heavy rains)

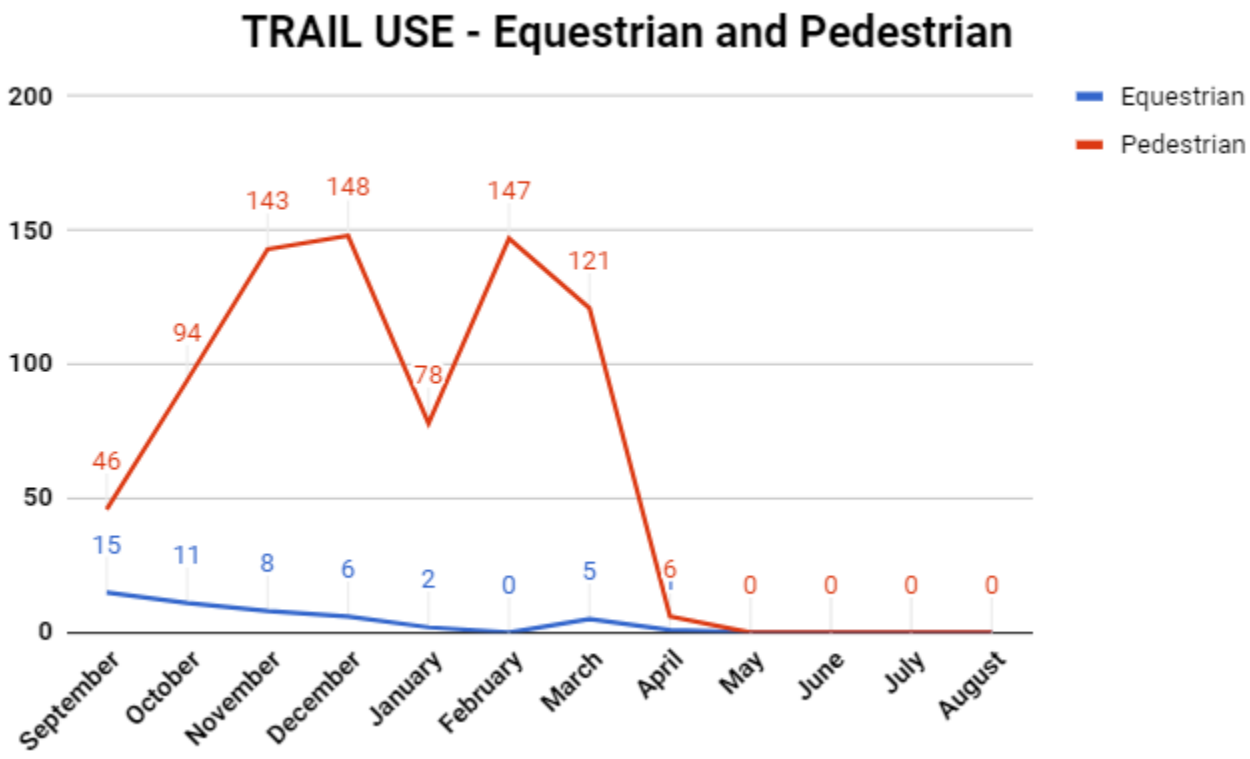

Figure 5. Equestrian Use vs. Pedestrian Use September 2017 – April 2018

Quality of the Visitor Experience. The information provided comes primarily from listening sessions and public scoping, as well as minimal feedback on equestrian use from visitor surveys conducted in 2010 and 2013.

Recreational Opportunities. Currently, approximately 4.5 miles of park trails are open to equestrian use. Equestrian users can access the trails from 9:00 a.m. to 5:00 p.m., Wednesday through Sunday. As previously mentioned, trails close to equestrian use if the park receives a certain amount of rain to protect the cultural and natural resources.

Between April 10, 2010, and June 13, 2010, the Park Studies Unit of the University of Idaho conducted a visitor study at the park. Team members distributed surveys to 347 general visitors and 206 annual encampment visitors. The overall response rate from both visitor groups was 68.7%. This survey asked questions about group and visitor characteristics, trip/visit characteristics and preferences, ratings of services, facilities, attributes and resources, preferences for future visits, and overall quality. Visitors were surveyed at the visitor center, the Star Fort Reservoir, and the Stockade Fort Field. Visitors that used the park's trail system (trails other than the 1-mile Historic Trail Loop) would only have been surveyed if they were in this aforementioned general area. The study notes that "Visitor groups that participated in horseback riding may be underrepresented, as they did not enter the park at the location where visitors were contacted for the study" (Blotkamp, Holmes, and Hollenhorst 2010). Likewise, the 2013 Visitor Survey Card Project by the Park Studies Unit was limited to park visitors who visited the survey locations.

There is no study or survey to indicate what the visitor experience is from the equestrian user's perspective. Of those who participated in the 2010 Visitor Study, "Most general visitor groups (96%) and most encampment visitor groups (94%) rated the overall quality of facilities, services, and recreational opportunities at Ninety Six National Historic Site as 'very good' or 'good" (Blotkamp, Holmes, and Hollenhorst 2010). Specifically, 97% of general visitors and 98% of encampment visitors rated the park trails as either "very good" or "good." Furthermore, most general visitor groups participated in learning history (75%) and walking / hiking (69%). When asked which activities visitors participated in on this visit, 1% of general visitors and 0% of encampment visitors participated in horseback riding. Conversely, 69% of general visitors and 53% of encampment visitors participated in walking / hiking. Also in the visitor study, participants were asked, "If you were a manager planning for the future of Ninety Six National Historic Site, what would you and your personal group propose?" (Blotkamp, Holmes, and Hollenhorst 2010). General visitors mentioned twice they would propose more walking and hiking trails; encampment visitors mentioned twice they would propose more walking and hiking trails; these visitors also mentioned twice they would propose more horse trails.

During public scoping, equestrian users discussed the current experience and recommended several possible equestrian-related recreation opportunities. There appears to be moderate levels of satisfaction from stakeholders about the interim trails that include 4.5 miles of riding that takes approximately 1 hour to 1.5 hours to complete. Some stakeholders suggest adding more miles of trail for equestrian use so that they would have a longer riding time. Others suggest that the quality of the experience would be better if the park were open later; since access to the riding trails closes at 5:00 p.m., it can be difficult for some to ride in the evening.

Facilities. Stakeholders also commented on the park's existing equestrian-related facilities and provided recommendations during public scoping for this plan. Most agreed that the trails were in good shape and that the bridges were adequate for horses to use. One individual recommended raising trail signs to provide easier viewing from horseback, while another suggested that riding on

the gravel roads was difficult for horses and wondered if it was possible to have a different surface for riding alongside these roads. Others recommended improving the rider's experience by installing waysides along the trail that interpret the historical site and its resources. Furthermore, some would like to see hitching posts along the trail so equestrian users could dismount and walk to the historic sites, as well as an informational kiosk, restroom facilities, a water source at the parking lot, and a picnic area or pavilion.

Chapter 4

Environmental Consequences

Robin Nat on horseback. NPS photo.

Gouedy Trail in autumn. NPS photo.

Interpretative trail in summer. NPS photo.

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CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

This section analyzes the effects of each alternative and the affected environment issues described in chapter 3 of this document. The analysis includes effects of each individual alternative and compares the effects to other alternatives, to other reasonably foreseeable future actions in the park, and to actions that occur outside of the park and in the region. The no-action alternative (alternative A) is used to compare the effects of current park actions and management direction with the proposed in the action alternatives.

As outlined in NPS Director's Orders 12, the following categories of impacts need to be considered and analyzed.

- **Direct Impacts:** Impacts caused by the alternatives at the same time and in the same place as the action.
- Indirect Impacts: Impacts caused by the alternatives that occur later in time or farther in distance than the action.
- **Cumulative Impacts:** Impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions The actions or projects that were identified and analyzed as part of cumulative effects are listed in the following section.
- **Beneficial**: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
- **Adverse**: A change that moves the resource away from a desired condition or detracts from its appearance or condition.

For each impact topic analyzed, an assessment of the potential significance of the impacts according to context and intensity is provided in the "Conclusion" section that follows the discussion of the impacts under each alternative. The intensity of the impacts is presented using the relevant factors from the preceding list. Intensity factors that do not apply to a given resource topic and/or alternative are not discussed.

PAST, CURRENT, AND FORESEEABLE ACTIONS THAT COULD CONTRIBUTE TO CUMULATIVE EFFECTS

Actions and Projects Within the Park

- **Foundation Document, 2014**—The core components of a foundation document include a brief description of the park as well as the park's purpose, significance, fundamental resources and values, other important resources and values, and interpretive themes. The foundation document also includes special mandates and administrative commitments, an assessment of planning and data needs that identifies planning issues, planning products to be developed, and the associated studies and data required for park planning. Along with the core components, the assessment provides a focus for park planning activities and establishes a baseline from which planning documents are developed. This equestrian management plan was identified in the foundation document as a high-priority planning need.
- **Cultural Landscape Report, 2009**—A plan for preserving the earthworks and rehabilitating the surrounding landscape to more accurately convey historic conditions. The plan also provides an assessment of the character-defining features of the site, documentation of

historic and existing conditions, and carefully crafted treatment recommendations intended to assist park staff in improving the condition of park resources while furthering strategic planning goals.

- **Invasive Species Management**—Invasive exotic plant species are encroaching upon and displacing native plants in the woodland and natural areas of the park. The project addresses control of invasive exotic vegetation, particularly Chinese privet, autumn olive, wisteria, kudzu, johnsongrass, stiltgrass, multiflora rose, thistle, Bradford pear, coral ardisia, bamboo, and mimosa in natural areas within the parks. Once this project is completed, the natural landscape associated with the 18th-century period for which the park was established will be restored to that of the period of significance and invasive exotic species controlled / eradicated. This project is ongoing and will continue into 2019.
- **Youth Leadership in Trails Program for 2018**—The park completed numerous projects in 2018 with the help of a youth crew from the Southeast Conservation Corps. The youth crew worked hand in hand with the park maintenance staff to provide much-needed upgrades to the trail system.
- **SEAC archaeological site monitoring**—It is reasonable to assume that in the near future, the Southeast Archeological Center will continue with site condition assessments. The condition of the park's known archaeological sites will be assessed and metal detecting and other surveys will be conducted to determine the location of any new sites.
- Past activities that have potential for impacts include agricultural use, logging, and fire suppression. It is the practice of the park to maintain the open fields through mowing.
- Park staff drive on the gravel service road, and most fire roads. These roads are maintained for administrative traffic but also allow for equestrian use.

Actions and Projects Outside the Park

- Agricultural use: the park represents a small region of protected land amidst a larger complex of mostly rural agricultural area in the central region of the South Carolina Piedmont (Natural Resource Condition Assessment Report, 2012). As previously mentioned, nonpoint source agricultural runoff from outside the park can contribute to high bacteria values within the park's streams.
- Four recreation areas that provide opportunities for equestrians are located within an hour or less drive from the park. The Fell Camp area of Sumter National Forest is an approximately 25-minute / 18-mile drive from the park, and it offers 26 miles of trail for riding. Lynch's Wood is an approximately 39-minute / 19-mile drive and has around 5 miles of trails. Brick House / Buncombe area of the Sumter National Forest is located approximately 53 minutes or a 38-mile drive from the park and has 33 miles of trails for equestrian users. Finally, Enoree is a 54-minute or 43-mile drive and has 36 miles of trails.

Impact Topics

The geographic area for the impact analysis is the trails, the soil, vegetation and water resources within the vicinity of the trails, and the equestrian parking lot. The water impact analysis also includes activities that occur outside of the park that have a direct and indirect impact on that particular resource.

The following impact topics are addressed in this environmental assessment:

- Cultural Resources—including ethnographic and archeological resources, and cultural landscapes
- Soils
- Vegetation
- Water Quality
- Visitor Use and Experience

Cultural Resources.

Impacts—Under alternatives A and B, with no major changes in where equestrian users could go within the park, resource protection activities of known ethnographic and archaeological resources and cultural landscapes would continue to be on an as-needed basis as issues are identified and funds are available. Park staff would continue to mitigate adverse impacts to cultural resources as a result of visitor use by educating visitors about the resources and how to avoid impacting them, engineering trails to avert damage to cultural resources from equestrian and pedestrian use, and enforce regulations related to visitor use and preserving cultural resources. The contributing historic resources and unique character-defining features of the park's cultural landscapes would continue to be protected via regular maintenance of structures, roads, trails, plants, and other landscape features, following the guidance presented in the park's general management plan and the treatment recommendations of the Southeast Region Cultural Resource Program. When repairs are necessary, the park staff would aspire to replacing historic features in kind, while retaining and protecting the extant historic resources, which would discourage the introduction of new features or techniques. Currently, no archeological resources or historic structures are documented in the vicinity of these trails or the equestrian lot.

Selection of alternative C would result in cultural resources being beneficially impacted as a result of closing all trails to equestrian use. Known and unknown archeological and ethnographic resources would not be uncovered and exposed by equestrians under this alternative; however, pedestrian use would continue to adversely impact cultural resources. The trails would remain as they currently exist, and their conditions would continue to be assessed regularly.

Cumulative Impacts—The Southeast Region Cultural Resource Program completed a pedestrian survey of the equestrian trails as they exist under alternatives A and B and determined that equestrian use on these trails did not significantly impact any archaeological sites. It is reasonable to assume that future surveys by the Southeast Region Cultural Resource Program would lead to a better understanding of where the park's archaeological resources are located. Park staff would continue to protect any known cultural resources, as well as protect any new resources discovered as a result of the Southeast Region Cultural Resource Program surveys or artifact exposure from equestrian use. Furthermore, any ground disturbance outside of existing trails would be surveyed for archeological resources.

Soils.

Impacts—Impacts from recreational use under alternatives A and B would include erosion, soil compaction, trampling, and root exposure. The area affected would be approximately 4.5 miles along existing trail corridors. Trail impact assessments have found that heavily used recreation trails had significantly more soil erosion, which can lead to temporary increased sedimentation in water resources. Trails located on ridgetops and upper slopes exhibited the greatest erosion. Recommended solutions of these soil erosion issues involved trail location to valley walls with side-hill construction methods (Leung and Marion 2000). The terrain of the park is relatively flat,

averaging approximately 500 feet in elevation. Proximity to streams can also increase the susceptibility of trails to erosion because of excessive wetness and periodic flooding of trail treads. A study evaluating trail conditions found trail design has a substantial influence on levels of trail degradation (Marion and Leung 2006). These included flat grades of 0-2%, excessive grades greater than 10%, and trails that directly ascend slopes. When trail grades are low, muddiness often occurs; when trail grades are high, soil erosion cannot be controlled (Marion and Leung 2006). Studies show that trail use by horses produces greater sediment yields than trail use by other users (Wilson and Seney 1994; Marion 2006). Higher sediment yields lead to increased turbidity or "cloudiness" of the water. Light has a harder time penetrating the water because of this suspended matter thereby reducing the photosynthetic capabilities of aquatic plants. Higher turbidity in the water also decreases the oxygen supply and interferes with fish feeding and reproduction (Hammitt, Cole, and Monz 2015). Mitigation measures and management strategies listed in chapter 2—such as closing the trails after prolonged and/or heavy periods of rain, trail design, repair and rehabilitation—would help to minimize the adverse impacts to soils from equestrian use.

Compaction would continue to cause the treads of trails to become lower than surrounding soils. Trail braiding and widening would continue to occur in certain locations as trail users avoid rutted, rocky, or wet areas on trails, compacting and eroding soils next to trails. Strategies listed in chapter 2 —such as hardening of the trail tread, installing boardwalks or structures, and drainage control structures—would all help mitigate the effects from equestrian use on the park's soils. Furthermore, the affected soil types are common across the region, and ongoing impacts would not diminish soil function in the park. Selection of alternative C would have short- and long-term, beneficial impacts on park soils; however, soils that exist on park trails would continue to be adversely impacted by pedestrian users.

Cumulative Impacts—Decades of recreational use on the existing trails has contributed to impacts to the soil. Equestrian users ride on the administrative roads within the park and would continue to do so under alternative B. Motorized use on these roads causes more adverse impacts to soils, vegetation, and water quality than does equestrian use. The approximately 1-acre area designated as the equestrian parking lot has been improved in the past with gravel limited to the entrance/exit of the park, which had an adverse impact on the soils in this area. Some additional adverse impacts (soil compaction and trampling, disturbance and/or removal of individual plants) are anticipated from the installation of a kiosk and trash cans at the equestrian lot under alternative B. The park would use the kiosk to post educational messages about low-impact recreational practices (i.e., Leave No Trace). Studies show that this type of persuasive educational messaging can be effective in influencing human behavior, thereby reducing the environmental impacts that visitors might cause (Marion, J.L. 2016). When the negative impacts of alternatives A and B are combined with those from past, present, and reasonably foreseeable actions, the total cumulative impact on soils would continue to be adverse but would not likely to be significant.

Vegetation.

Impacts—Under alternatives A and B, adverse impacts would occur when trail users leave the designated trail (typically to avoid mud holes or exposed rocks/roots) and trample vegetation, which then leads to plant loss. There is also the possibility under these alternatives that invasive species, which already exist in the park, may spread. Furthermore, new invasive species could be introduced into the park by equestrian use. Some additional adverse impacts are anticipated from the installation of a kiosk and trash cans at the equestrian lot under alternative B. For alternative C, closing trails to equestrian use, while still allowing pedestrian use, would provide minimal opportunities for vegetation to regenerate; however, the long-term ecological process would not be affected.

***Cumulative Impacts*—**Vegetation that once grew directly in the path of the backcountry trails and parking areas has been obliterated by pedestrian and equestrian use (see note under soils about administrative motorized use of the roads). Loss of and disturbance to vegetation within the park has also occurred as a result of prior agricultural use, logging, fire suppression, and mowing of open fields. Impacts to vegetation and soils for alternatives A and B would be adverse but would not likely be significant because there would not be a change in species abundance, distribution, and no population level effects. These effects are expected to be mitigated by the same trail construction and maintenance measures identified under soils. Furthermore, the park already monitors and controls invasive exotic species and would work to eradicate any new populations associated with equestrian use. Therefore, there would be no long-term meaningful change to these resources on the equestrian use trails or within the footprint of the equestrian parking lot.

Water Quality.

***Impacts*—**As mentioned under the soil impact analysis, equestrian use can lead to erosion, higher sediment yields, increased turbidity, less aquatic plant photosynthesis as well as less oxygen in the water, reduced food supplies, and impacts on fish gill function. Mitigation measures and management strategies listed in chapter 2—such as closing the trails after prolonged and / or heavy periods of rain, trail design, repair and rehabilitation—would help to minimize the adverse impacts to water quality from equestrian use. Per alternative C, closing trails to equestrian use would provide an opportunity for the water quality within the park to improve, but pedestrian use and outside influences would continue to have an adverse impact on the water quality. Continued use by pedestrians would result in possible sedimentation in the water resources. However, a substantial increase in pedestrian use and associated erosion is not expected. Additionally, the impacts resulting from erosion are expected to be relatively small when compared to the overall water quality, functions, and values of the waters throughout the park.

***Cumulative Impacts*—**Any past actions that resulted in new impervious surfaces (facility construction, trails or overlooks, new roads, and parking lots) or contributed sediment to water bodies would add to the cumulative impacts on water quality (see note under soils about administrative motorized use of the roads). The primary source of *E. coli* (which commonly exceeds water quality standards following rainfalls) is attributed to agricultural activities that occur upstream of the park. Furthermore, the impacts from the alternatives would not affect the integrity of the resource in a meaningful way because of the natural capacity of the watershed to infiltrate and filter water and because the project area represents a small fraction of the total watershed. Sustainable trail design and trail closures can minimize adverse impacts under alternatives A and B.

Visitor Use and Experience.

Impacts—

Alternative A—There would be no change to visitor use or the visitor experience as it currently exists. Visitors would continue to have access to the 4.5 miles of designated equestrian trails and 9.5 miles of hiking trails. Pedestrian users would continue to enjoy more miles of trails than equestrian users, and there would continue to be adverse impacts to equestrian users by allowing them on fewer miles. In addition, equestrian users would have less access to high-quality recreation opportunities because of the lack of extended hours for riding and no new improvements to the trails, parking lots, or facilities.

Alternative B—The equestrian user's riding experience would be the same under this alternative as it is under the continuation of the no-action alternative; however, the modest improvements to the equestrian lot (bulletin board, trash receptacles, and a permanent gate) would improve not only the equestrian users' experience, but also any visitors who access the lot. A special use permit system would have both beneficial and adverse impacts on the visitor experience. Beneficial impacts would include improved visitor experience for pedestrians, reduced impacts to the natural resources by limiting the maximum number of people on trail at one time, and the timing and distribution of riders could be more evenly spread out to reduce congestion during peak rides. Adverse impacts could include the inconvenience of obtaining a permit, reduced spontaneity for a visit to the park, potential for some to be unable to receive a permit, and the visitor perception that the park is less easy to visit.

Studies show that conflicts can occur between different trail-user groups such as equestrian users and pedestrians. Currently, the user groups at the park share no known conflicts. Furthermore, as part of this plan, the park will be alerted of conflicts via visitor complaints. Mitigation strategies employed as part of monitoring visitor capacity on the trails could also be used to reduce conflicts among user groups. For instance, if the park received more than three visitor complaints per month about trail usage, the park could create and post trail signs or informational brochures explaining trail etiquette (e.g., who yields to whom). For these reasons, visitors would not likely experience conflicts on the trails as a result of continuation of the no-action alternative or implementation of alternative B.

Alternative C—Equestrian users would be adversely impacted by closing all trails within the park to equestrian use. Conversely, pedestrian users would be beneficially impacted if they no longer interacted with equestrian users on park trails or see the impacts associated with equestrian use; however, there have been a limited number of complaints related to multiple trail use. There would be no noticeable changes in the pedestrian user's experience or in any defined indicators of visitor satisfaction or behavior.

Cumulative Impacts—Located within an hour or less drive from the park are approximately 100 miles of trails that offer recreational opportunities for the equestrian community. If equestrian riders are looking for a longer riding experience than the one they can encounter at the park, there are other opportunities within a short drive to do so. Equestrian use has occurred at the park for several decades. Continuing to allow it would result in overall beneficial impacts for equestrian users and provide them with opportunities to connect with park resources and become park stewards.

Chapter 5

Consultation and Coordination

Cherokee Lifeways interpretation. NPS photo.

Tombstone cutting demonstration. NPS photo.

Horseback trail in autumn. NPS photo.

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CHAPTER 5: CONSULTATION AND COORDINATION

The National Park Service places a high priority on public involvement in the NEPA process and on giving the public an opportunity to comment on the proposed action. Consultation and coordination with federal, state, and local agencies was also conducted to identify issues and/or concerns related to natural and cultural resources within the park. This section provides a summary of the public involvement and agency consultation that occurred in the preparation of the environmental assessment.

PUBLIC INVOLVEMENT

The public scoping period began on June 6, 2017, and ended July 7, 2017. The park issued a news release and posted project information, including the scoping newsletter, to the park's PEPC website to provide a project overview and invite the public to participate in the planning process. In addition, a public open house was held on June 15, 2017, at the Greenwood County Library to provide the public with information and solicit input regarding the proposed Equestrian Management Plan. Information shared at the open house included the ideas and strategies currently being considered to determine how best to manage equestrian use of the park while protecting and preserving for present and future generations the historic resources for which the park was established. The only public comments on this plan during the public scoping period came from the 12 attendees at the public meeting in June. The park did not receive any comments submitted by mail, nor were there any comments received via PEPC website.

At the public meeting, substantive comments included:

- Commenters expressed a desire for additional facilities including an informational kiosk at the trailhead, access to a water source for horses, a picnic table, hitching posts, restrooms at the equestrian lot, and better signage directing people to the equestrian lot, as well as on the trails.
- Commenters asked if the gate / park could remain open past 5:00 p.m. to allow equestrian use later in the afternoon / evening, as well as if there could be additional trail mileage for a longer riding experience within the park.
- Commenters noted that overall the trails were in good condition and did not need to be very wide to accommodate equestrian use. Some suggestions for improving the trail included not using gravel and possibly making them one-way.
- Commenters noted that their visitor experience would be improved if there were more interpretive opportunities available while riding the trails. These improvements included installing either hitching posts so that equestrian users could tie up their horses and still see the historic resources or by installing wayside exhibits that would educate the public on the park's historical sites and resources.

Comments collected during scoping were used to help define the issues and proposed action that are examined in detail in this plan.

CONSULTATION WITH OTHER AGENCIES AND ORGANIZATIONS

U.S. Fish and Wildlife Service, Section 7 Consultation

There are no federally threatened or endangered species within the park, and, thus, the Endangered Species Act and relevant regulations at 50 *Code of Federal Regulations* Part 402 are not applicable. It was not necessary to consult the U.S. Fish and Wildlife Service on this plan.

State Historic Preservation Office of the South Carolina Department of Archives and History, Section 106 Consultation

Agencies that have direct or indirect jurisdiction over historic properties are required by Section 106 of the National Historic Preservation Act of 1966, as amended (54 USC 306108) to take into account the effect of any undertaking on properties eligible for listing in the National Register of Historic Places. The National Park Service has determined that the actions proposed in the management plan are not likely to adversely affect cultural resources in the park and would not alter or diminish, directly or indirectly, any of the characteristics of the national historic site that qualify the property for inclusion in the National Register of Historic Places.

Under the terms of the 2008 Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, "all undertakings that do not qualify for streamlined review [e.g., preparation of plans] . . . will be reviewed in accordance with 36 CFR Part 800." Therefore, this plan will be submitted to the South Carolina Historic Preservation Office (SC SHPO) and to the Catawba Indian Nation Tribal Historic Preservation Office (THPO) for review and comment.

One of the first steps a federal agency must take in the Section 106 process is to initiate consultation with the state historic preservation office, tribal historic preservation office and other consulting parties. Initial contact and consultation with the state historic preservation office (SHPO) and/or tribal historic preservation office (THPO) is critical to ensure that the preservation experts who represent the citizens of a state or an Indian tribe have the opportunity to influence federal decision making at the very beginning of the Section 106 process. As two of the most important preservation voices in Section 106, collaboration and partnerships among state historic preservation offices and tribal historic preservation office are powerful tools to advance the preservation of historic properties. In fact, Section 101(d)(1)(a) requires the Secretary of the Department of the Interior to foster communication and collaboration between Indian tribes and state historic preservation offices. Initial notification letters referencing this plan were sent to the Advisory Council on Historic Preservation, the South Carolina State Historic Preservation Office and Catawba Indian Tribal Historic Preservation Office on March 21, 2017. The National Park Service did not receive a response from either the Advisory Council or the historic preservation offices.

Section 106 Summary. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, Assessment of Adverse Effects), the National Park Service has determined that the adverse impacts identified under NEPA analysis above would not alter or diminish, directly or indirectly, any of the characteristics of the historic district that qualify the property for inclusion in the National Register. All equestrian use would occur away from the park's historic resources, and, therefore, the National Park Service concludes that implementation of any of the alternatives would have no adverse effect on any historic properties. On September 11, 2018, the park sent letters to the South Carolina State Historic Preservation Office and Catawba Indian Tribal Historic Preservation Office informing them of the finding of no adverse effect. The park received a

response from the South Carolina State Historic Preservation Office on October 16, 2018, that concurred that the implementation of any of the proposed alternatives would have no adverse effect to known historic properties within the park.

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Appendix A

Bibliography

Bird watching at Star Fort Pond. NPS photo.

Outdoor interpretation. NPS photo.

Horseback Trail sign. NPS photo.

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