



Chattahoochee River National Recreation Area

Comprehensive Trails Management Plan / Environmental Assessment

2022

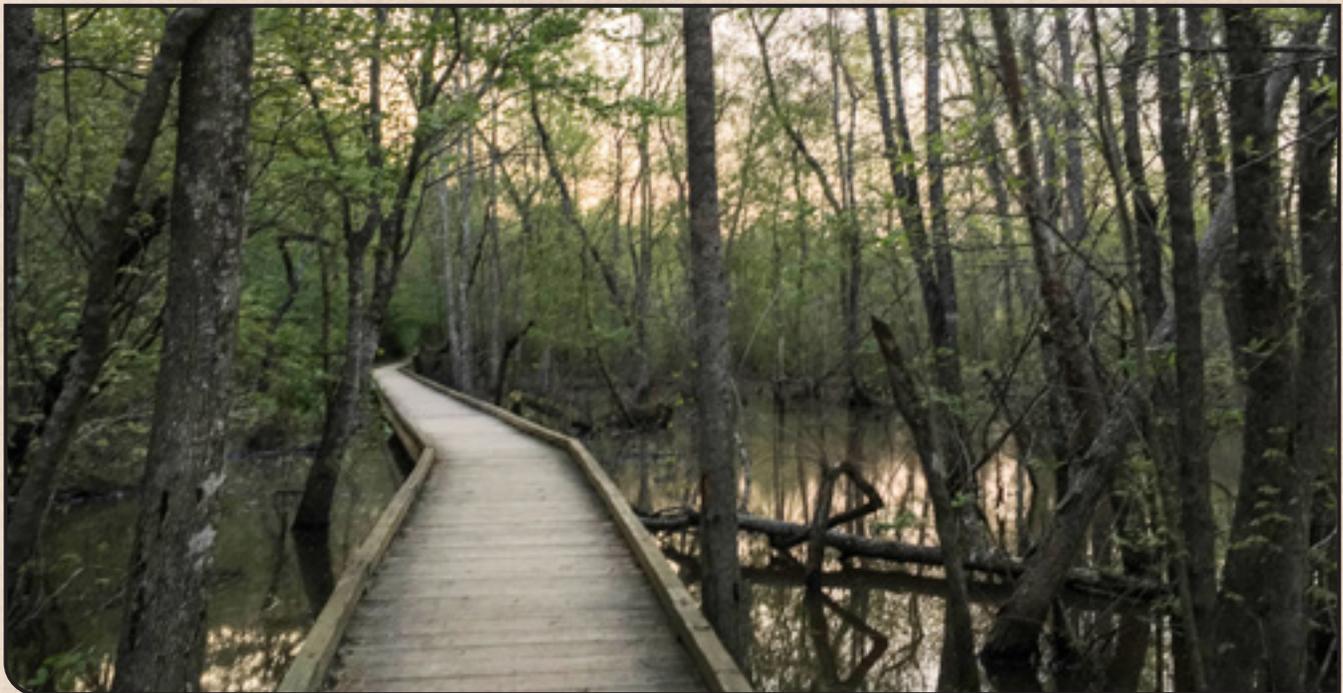


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Executive Summary

Chattahoochee River National Recreation Area is a valuable outdoor recreation resource used by over six million people who are located within the Atlanta metropolitan area and beyond. The park needs a trails management plan to address trail construction and maintenance alternatives for developing and managing a parkwide trail system integrated with other recreational trails in the Atlanta metropolitan area. Most of the park's existing 66.9 miles of designated trail system consists of legacy social trails, utility corridors, and relict roads. These legacy trails lack connectivity to neighboring park trails, degrade water quality through erosion runoff, and damage plant habitat. The proposed trail system, as described in alternative 2 below, would account for 99.3 miles of designated trail use and would improve its overall sustainability, protect the park's resources, and improve the visitor experience and circulation. Approximately 32 miles of trails would be added to the official trail system, resulting in a 48% increase in trail mileage. The overall mileage of designated trails available for public use in the park under alternative 2 would increase substantially, and a focus would be placed on improving the quality of the trails to better serve visitors and achieve greater resource stewardship.

Purpose and Need

The purpose of the trails management plan will be to provide guidance for improving trail conditions and connecting the 15 park units (figure 1) within the national recreation area as part of a sustainable, accessible, and regionally integrated trail system.

The trails management plan is needed to:

- develop a more cohesive trail network within and between individual park units within the Chattahoochee River National Recreation Area and the Atlanta regional trail network;
- enhance visitor use and the visitor experience;
- adjust park zoning to match desired visitor experience; and
- protect natural and cultural resources through sustainable trails management practices.

Alternatives

Alternative 1: No Action (Continue Current Management)

Alternative 1 describes what a continuation of current management looks like and serves as a baseline for comparing and considering the proposed trails management plan. Under current management conditions, the park would continue to manage trails without a comprehensive plan for a sustainable trail system. Trails would continue to be managed for visitor experience and desired conditions based upon the 2009 general management plan (GMP) zones in which they are placed, and individual units

would not have distinct desired conditions and experiences for trail-based activities. Trail construction, reconstruction, and restoration would occur on a case-by-case basis. The existing designated trail system would continue to be provided, and undesignated trails would continue to comprise much of the trail system; no changes in allowed trail uses would occur. Trails would continue to be managed and maintained without regard to any specified trail class or maintenance standard. The park would continue to implement temporary trail closures as needed to protect visitor safety and park resources in accordance with the provisions of 36 Code of Federal Regulations (CFR) 1.5. Access to the trail system would continue to occur from a variety of disparate access points with varying levels of signage.

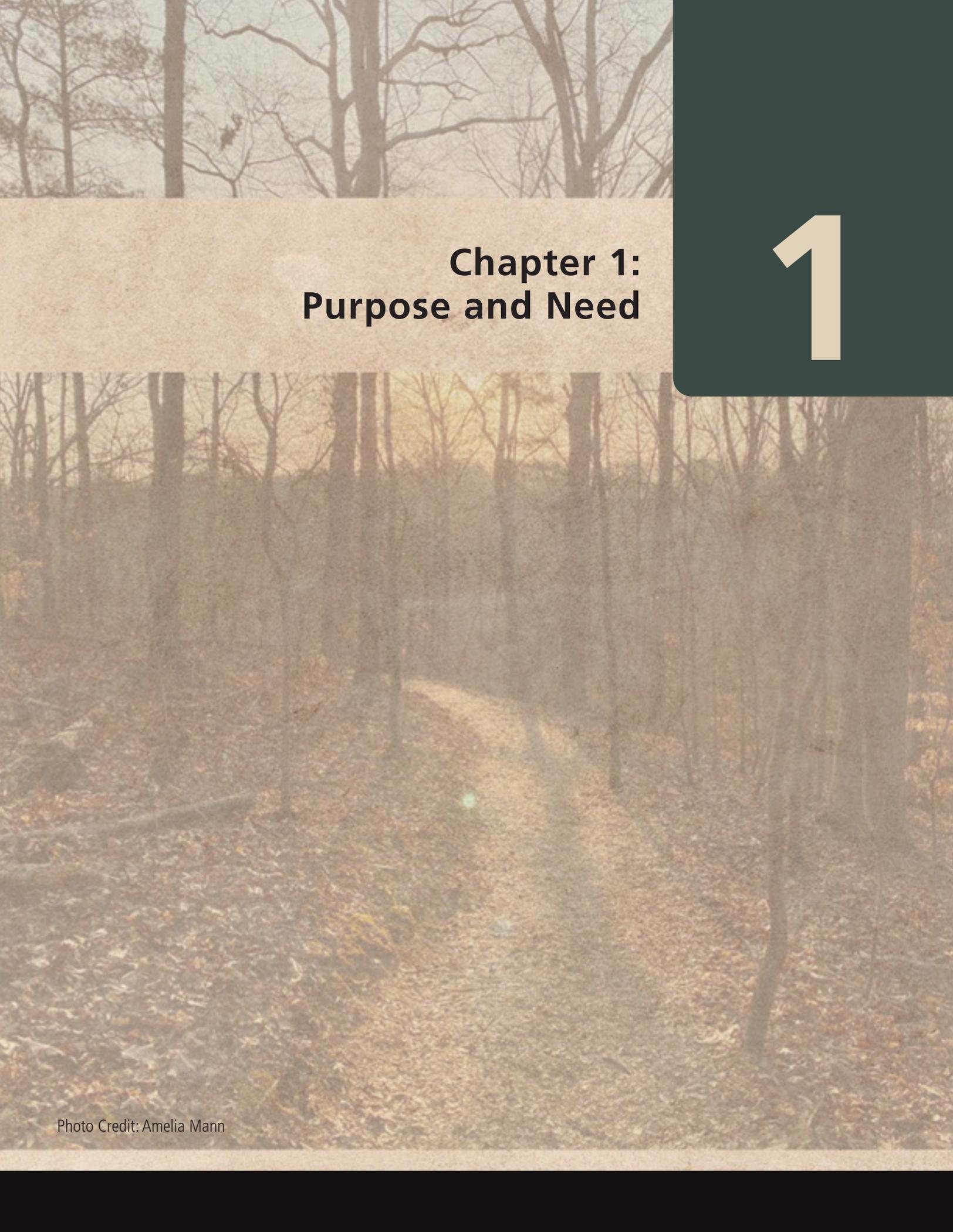
Under alternative 1, the existing trail system would account for 66.9 miles of designated trail use in 15 units in Chattahoochee River National Recreation Area. Maps of the of the existing trail system under alternative 1 (the current system) are included in appendix A. Table 3 in chapter 2 provides additional details on the existing trail mileage by park unit and allowable trail use.

Alternative 2: Action Alternative (National Park Service Preferred Alternative)

Alternative 2 describes what the redeveloped Chattahoochee River NRA trail system looks like and how it would improve its overall sustainability, protect the park’s resources, and improve the visitor experience and circulation. The overall mileage of designated trails available for public use in the park would increase substantially, and a focus would be placed on improving the quality of the trails to better serve visitors, achieving greater resource stewardship, and increasing the sustainability of the trail system. Visitor activities such as hiking, walking, exercising leashed pets, wildlife watching, and running would continue on park trails. Bicycling would continue to be allowed on designated trails in the Cochran Shoals unit, Palisades unit, and on trails designated as part of the potential greenway (see the “Greenway” section in chapter

2). The limited equestrian use that does occur on a few park trails at Bowmans Island would be phased out. Under this alternative, trails have been designed and proposed in consideration of desired conditions and visitor experiences in the park (see chapter 1) and in consideration of three aspects of trail sustainability—physical, social, and managerial sustainability. Under this alternative, the Visitor Use Management Framework would be applied, including the adaptation of indicators, thresholds, monitoring, and visitor capacity. This alternative also includes a defined system of trail types (see appendix C), trail standards (see appendix F), and strategies related to trailheads and trail access points, trail and trailhead naming, signage, and trail makers, the potential greenway, accessibility, restored trails, unauthorized visitor-created trails, invasive species management, trail rehabilitation, final alignment for trails, implementation, and unit-specific strategies.

Under alternative 2, the proposed trail system would account for 99.3 miles of designated trail use in 15 units in Chattahoochee River National Recreation Area. The resulting trail mileage is a summation of existing trails and adopted social trails, plus new trails, less trail restoration. Approximately 32 miles of trails would be added to the official trail system, resulting in a 48% increase in trail mileage. These trail additions do not account for the potential greenway trail mileage, which would result in an even higher total count of trail mileage and would provide more multiuse activities in more park units. Many actions or strategies would apply parkwide, while others are unit specific. Maps of the proposed trail system under alternative 2 (the NPS preferred alternative) are included in appendix B. Table 4 provides additional details on the proposed trail system mileage by park unit and allowable trail use.



Chapter 1: Purpose and Need

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Chapter 1: Purpose and Need

Background

Chattahoochee River National Recreation Area (Chattahoochee River NRA, the park) contains a rich assemblage of natural resources, and the park's green space provides a variety of outdoor recreation opportunities as well as cultural and educational activities. The park is used as a valuable outdoor recreation resource by over six million people located within the Atlanta metropolitan area as well as visitors from around the world. The Chattahoochee River begins in northern Georgia, passes through Lake Lanier and the suburbs north of Atlanta, and continues to the Georgia–Florida border as a tributary to the Apalachicola River, totaling 540 river miles. On August 15, 1978, President Jimmy Carter signed legislation that set aside the Chattahoochee River National Recreation Area as a unit in the national park system. The park contains 48 river miles and is in an urban and suburban area between Lake Lanier and Atlanta, Georgia.

Chattahoochee River National Recreation Area needs a trails management plan to address trail construction and maintenance alternatives for developing and managing a parkwide trail system integrated with other recreational trails in the Atlanta metropolitan area. Most of the park's existing 66.9 miles of designated trail system consists of legacy social trails, utility corridors, and relict roads. These legacy trails lack connectivity to neighboring park trails, degrade water quality through erosion runoff, and damage plant habitat. The park currently has no comprehensive trails plan nor has the park addressed the feasibility of rerouting trails over/around creeks and washouts, provided for closure of unsafe trails, or identified user groups and designated trail uses. Additionally, the park needs to plan for providing backlog maintenance to bring the park trails up to best management practice standards.

Between 2008 and 2013, grant-funded, volunteer-built trail improvements at the park's Sope Creek unit became extremely popular with users and local governments. Various partners and neighbor groups have approached the park about improving trails at other units and connecting with trail networks beyond the park's boundaries. The recent Chattahoochee RiverLands Greenway Study (Chattahoochee RiverLands 2020) reconsiders the region's relationship to the river and proposes a 100-mile uninterrupted multiuse linear network of greenways, blueways, and tributary trails connecting people to parks, the river, and other key destinations. Portions of the proposed greenway connect to units at Chattahoochee River National Recreation Area, and the National Park Service (NPS) is committed to advancing these regional trail connections. Chattahoochee National Park Conservancy, the park's primary philanthropic partner, helped fund the initial trail condition assessment that ultimately informed this comprehensive trails management plan.

Project Purpose, Needs, and Goals

The purpose of the trails management plan will be to provide guidance for improving trail conditions and connecting the 15 park units (figure 1) within the national recreation area as part of a sustainable, accessible, and regionally integrated trail system.

The trails management plan is needed to

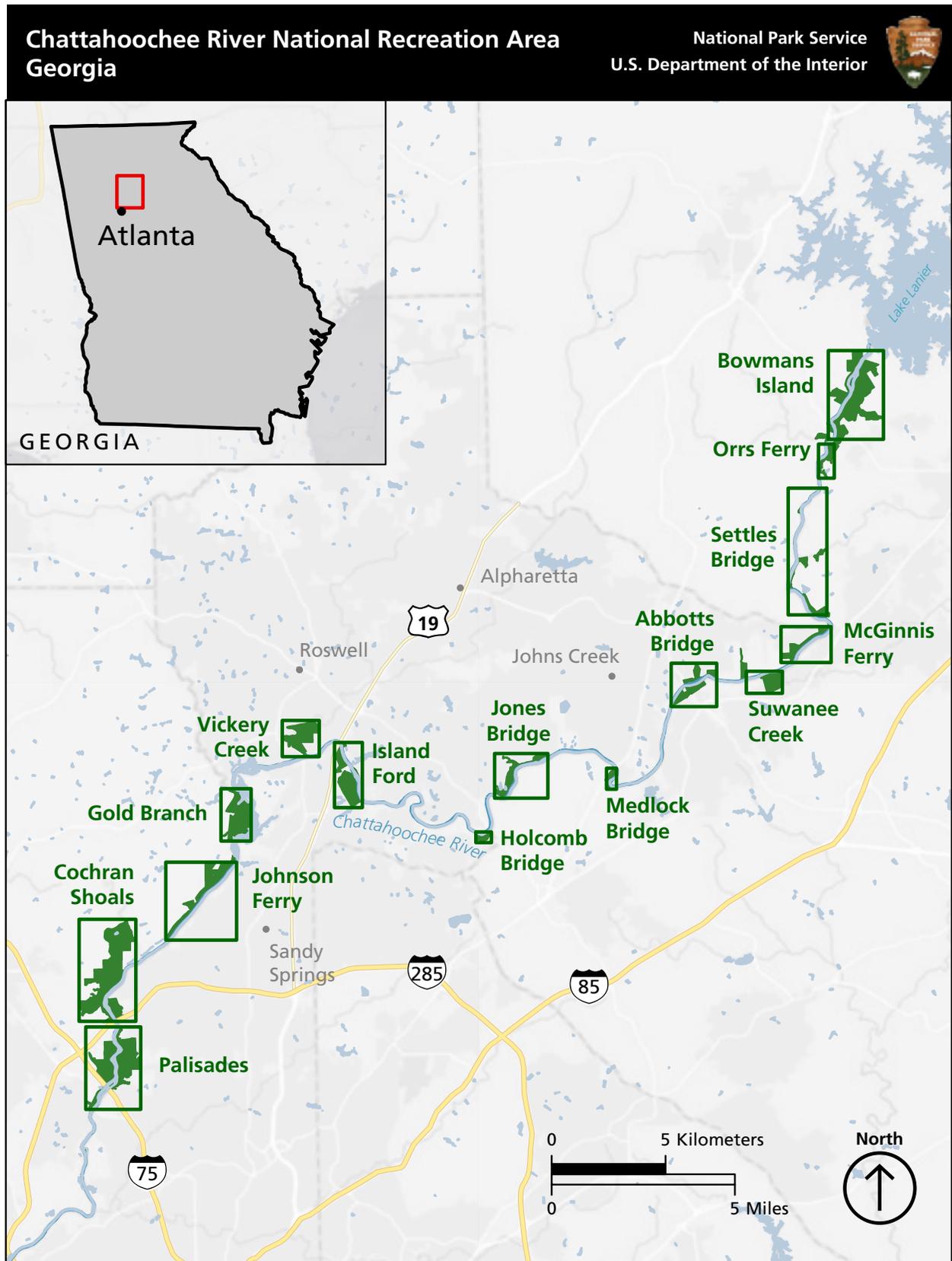
- develop a more cohesive trail network within and between individual park units within the Chattahoochee River National Recreation Area and the Atlanta regional trail network;
- enhance visitor use and the visitor experience;
- adjust park zoning to match desired visitor experience; and
- protect natural and cultural resources through sustainable trail management practices.

The goals for this trails management plan are to

- provide management guidance and direction to increase trail lifespan and minimize maintenance needs while staying within park personnel and budgetary constraints;
- protect park resources and limit impacts from increased trail use;
- reduce visitor use conflicts;
- create a trail system that acts as a common thread between 15 individual parks units;
- improve accessibility of the park's network of trails;
- enhance or enable appropriate connectivity with existing or planned regional trail networks; and
- identify opportunities for trail-related partner projects with local municipalities and non-governmental organizations.



Figure 1. Units of Chattahoochee River National Recreation Area



Planning Context

Relationship to Other Regional Planning Efforts

The recent Chattahoochee RiverLands Greenway Study (Chattahoochee RiverLands 2020) reconsiders the region's relationship to the river and proposes a 100-mile uninterrupted multiuse linear network of greenways, blueways, and tributary trails connecting people to parks, the river, and other key destinations (see <https://chattahoocheeriverlands.com/downloads/>). Portions of the proposed greenway connect to units at Chattahoochee River National Recreation Area, and the National Park Service is committed to advancing these regional trail connections. The Chattahoochee RiverLands Greenway Study (Chattahoochee RiverLands 2020) is funded in partnership by Atlanta Regional Commission, The Trust of the Public Land, and Cobb County.

The RiverLands Greenway Study (Chattahoochee RiverLands 2020) recommends a preferred alignment at various locations throughout the study area but also recognizes that in many places, this alignment may prove infeasible. The RiverLands Study offers multiple alignments, including a practical alignment, to ensure that the greenway has continuous connections along its entire length. According to the RiverLands report, the "Practical Alignment takes advantage of existing trail infrastructure, easements, or publicly owned land where hurdles to trail implementation are comparatively lower." Inclusion of proposed greenway alignments in specific units in this comprehensive plan was based on maintaining desired resource conditions as defined in the park's 2009 general management plan as well as the desired conditions for trails set forth in this plan and other operational considerations. The general management plan guides park management and identifies zones that describe the appropriate balance between visitor activities and resource protection. In some areas of the park, the desired condition is to prioritize the protection of natural resources along the riverbank as buffer zones from development.

Through the development of the trails management plan, the National Park Service determined that in some cases the RiverLands' preferred alignment was not viable due to conflicts with the general management plan's desired conditions, the park's operational capacity to manage for increased visitation, or due to unacceptable threats to resource conditions. In cases where the NPS preferred alternative of the trails management plan does not align with the RiverLands preferred alignment, the park encourages the adoption of the RiverLands' practical greenway alignment.

In addition, this comprehensive trails management plan identifies greenway corridors throughout several park units. However, this plan is not proposing a commitment by the National Park Service to construct the greenway in those areas, nor a commitment for any resources or funding for its further planning. Rather, this plan is intended to serve as a roadmap to park partners and provide direction on design standards and limitations for the greenway on NPS lands and identify the available corridors for the greenway through Chattahoochee River National Recreation Area. Any implementation of greenway construction would be fully dependent on partner resources as a component of a larger regional effort.

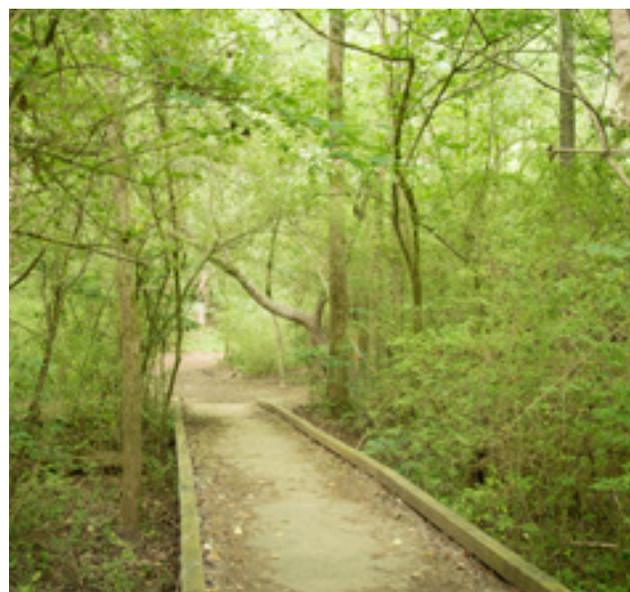


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Relationships to Other Park Plans

This document is part of Chattahoochee River National Recreation Area’s planning portfolio. Together, all the documents in a park’s planning portfolio comprise the park management philosophy and create a logical, trackable guide for future park management actions. This trails management plan addresses the park’s trails to ensure they are sustainable, offer high-quality recreational experiences, and protect park resources. The National Parks and Recreation Act of 1978 (54 USC 100502) requires the preparation and timely revision of general management plans for each unit of the national park system. At a minimum, each park must have a plan or series of plans that address the four statutory requirements identified in 54 USC 100502:

1. measures for the preservation of the area’s resources;
2. indicates the types and general intensities of development (including visitor circulation and transportation patterns, systems and modes) associated with public enjoyment and use of the area, including general locations, timing of implementation, and anticipated costs;
3. identifies an implementation commitment for visitor carrying capacities for all areas of the unit; and
4. indicates potential modifications to the external boundaries of the unit and the reasons therefore.

This trails management plan addresses the statutory requirement to provide for the types and general intensities of development associated with public enjoyment and use of the area. This plan also addresses the identification of an implementation commitment for visitor carrying capacities for the park’s land-based trail systems.

As substantial new issues or significant changes arise, the National Park Service may amend general management plans. This plan serves as an amendment to the 2009 Chattahoochee River

General Management Plan/Environmental Impact Statement. Specifically, this plan will amend the management zoning identified for the Orrs Ferry, McGinnis Ferry, Suwanee Creek, Holcomb Bridge, Island Ford, Vickery Creek, and Palisades units. See chapter 2 for more information on the current zoning and proposed changes to zoning.

General Management Plan: Management Zones

The National Park Service uses management zoning to identify and describe the appropriate variety of natural resource conditions, cultural resource conditions, and visitor experiences to be achieved and maintained in the different areas of a park. The zoning for Chattahoochee River National Recreation Area is established in the 2009 Chattahoochee River General Management Plan/Environmental Impact Statement. The zones provide a description of desired conditions at a high level. The trails management plan would update or affirm these zones, and in some cases, this comprehensive trails management plan would make amendments to the current GMP zoning.

2009 GMP ZONES

The general management plan identified and described zones within the park and the appropriate activities and facility types for each of the zones. The following text summarizes the zone descriptions. For complete descriptions, see the 2009 general management plan.

Developed Zone. Visitors would have convenient access to park buildings and other facilities, with ample opportunity for social experiences and a high probability of encountering other visitors or park staff.

- Activities: Day hiking, off-road bicycling on designated trails only, picnicking, fishing, equestrian use.
- Facilities: Trails, river access facilities, visitor and administration facilities, parking areas, picnic areas, restrooms, roads, bridges, kiosks.

Natural Area Recreation Zone. At certain times of the day or season, opportunities for solitude would occur, but in general, the probability of encountering other visitors would be moderate to high. . The degree of isolation and feeling of closeness to nature would be low to moderate and would be limited by the presence of other people. A high diversity of experiences would be possible.

- **Activities:** Day hiking, off-road bicycling on designated trails only, picnicking, fishing, equestrian use on existing trails only.
- **Facilities:** Unpaved trails only, river access facilities, visitor and administration facilities limited in size and impact, parking areas, picnic areas, restrooms, roads (limited access), bridges (for nonmotorized vehicles and pedestrians), kiosks.

Historic Resource Zone. This zone was established with the specific goal of protecting cultural resources within the park while allowing the public to enjoy and understand the value of these resources. The number of visitors to this zone would be moderate but variable, depending on the type of resources and location. Facilities within this management zone would be in context with the historical or archeological resources while allowing for an optimal visitor experience.

- **Activities:** Day hiking, picnicking, fishing. No off-road bicycling or equestrian use.
- **Facilities:** All facilities would be designed or sited in a manner appropriate to the cultural context of the zone and could include trails, river access facilities (existing only), visitor and administration facilities, parking areas, picnic areas, restrooms, roads, bridges, kiosks.

Natural Zone. A relatively undisturbed environment that visitors interested in nature and natural settings could enjoy. Visitors would experience a relatively natural environment with a relatively low probability of encountering many people during a given visit to the park. Hiking on unpaved trails and nature observation would be typical activities. Visitors in this zone would feel farther away from comforts and conveniences.

- **Activities:** Day hiking, picnicking (without facilities), fishing. No off-road bicycling or equestrian use.
- **Facilities:** Primitive trails only, foot bridges only, kiosks. No new river access facilities, visitor/administrative facilities, parking areas, picnic areas, restrooms, or roads.

Rustic Zone. Relatively undisturbed environment that the visitor interested in nature and natural settings could enjoy. Opportunities for closeness to nature, tranquility, and the application of outdoor skills would be common. Visitors would be able to have a large variety of outdoor experiences, but this zone would feel farther away from comforts and conveniences than the developed zone, with somewhat limited access.

- **Activities:** Day hiking, off-road bicycling on designated trails only, picnicking (without facilities), fishing. No equestrian use.
- **Facilities:** Primitive trails only, river access facilities (step downs/boardwalks/docks/viewing platforms only), parking areas, existing restrooms only, existing roads only, bridges supportive of nonmotorized use, kiosks. No visitor/administrative facilities or picnic areas.

Resource Impact Topics

Achieving the purpose, need, and goals of the trails management plan could result in impacts to park resources. The following section describes the level of consideration given to park resources in the context of this planning effort.

Impact Topics Retained for Further Analysis

Impact topics represent resources that could be affected, either beneficially or adversely, by implementing any of the proposed alternatives of this plan. 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 trails management plan:

- vegetation
- wildlife—birds, coyotes, herptiles
- soils
- wetlands
- visitor use and experience
- archeological resources

Impact Topics Considered but Dismissed from Further Analysis

The following impact topics are not analyzed because they do not exist in the project area; would not be affected by the proposal or the likelihood of impacts are not reasonably expected or through the application of mitigations measures there would be no potential for significant effects; and were not a subject of contention among the public and other agencies.

SOCIOECONOMICS

Based on an evaluation of preliminary impacts tied to the socioeconomic environment, visitor populations, and the regional economy, it was determined that this impact topic could be dismissed from further analysis. No noticeable difference would occur in socioeconomic effects between the action and no-action alternatives, and further analysis of this topic would not influence the selection of a preferred alternative.

Visitor use levels and demographics would not be substantively changed from current conditions given the management strategies outlined in the plan. Should use levels approach visitor capacities or thresholds in the future, management strategies could be implemented to redistribute use across space and time, although these actions would be unlikely to appreciably affect overall visitor use levels or demographics. Implementation of the action alternative would provide a slight beneficial impact to the economy of the area due to minimal increases in potential employment opportunities associated with contracted trail construction and maintenance. Any increase in workforce and revenue, however, would be temporary, lasting only as long as phased project work. Any increase would also be miniscule in comparison to the size of the greater Atlanta area's economy. Because the impacts to the socioeconomic environment would be negligible and not measurable, this topic has been dismissed from further consideration.

HISTORIC ROADS

The development of a comprehensive trail system would not contribute to long-term impacts to historic roads or trails at the park. Archeological survey and geographic information system (GIS) analysis of historic maps have indicated known and potential relict roads throughout the park related to industrial activities (e.g., mills), farming, and recreational or general access to or across the river. In the first half of the 20th century the region's agricultural economy contracted, and many local farm roads throughout the study area were abandoned, especially those that led to bridges that washed out and were not replaced. Many roads associated with old mills were similarly abandoned. Other roads remain in use, but their alignments were shifted to eliminate sharp curves or connect with new bridges, or they were otherwise altered through paving, road widening, and other improvements. Such roads lack sufficient integrity to convey their historic character and are not historic properties. The only historic roads identified in the park's historic resource study that, individually, might retain sufficient integrity for listing in the National

Register of Historic Places are Paper Mill Road and Hyde Road (the former was determined eligible in consultation with the Georgia State Historic Preservation Office). Both of these roads are located outside of the park boundaries and will not be impacted by this project. A small number of historic roads that are contributing features to a cultural landscape (e.g., the Sope Creek mill road) will not be impacted by this project. A small number of relict roads currently in use as trails are being analyzed as potential historic properties. Any necessary minimization or avoidance measures for these trails related to the proposed actions would be adopted in consultation with the Georgia State Historic Preservation Office and would be addressed through a programmatic agreement approved before a final decision on the trail plan.

CULTURAL LANDSCAPES

The development of a comprehensive trail system would not contribute to long-term impacts to cultural landscapes at the park. Eleven cultural landscapes have been identified within the park or within its authorized boundaries, all of which date to the historic period and are associated with industrial activities (mills), farming and settlement, or recreational activities (e.g., Island Ford Lodge landscape). The best-documented cultural landscapes are the Sope Creek, Ivy Mill and Allenbrook, and Hyde Farm historic landscapes. No proposed project actions exist in or immediately adjacent to most of these cultural landscapes, namely the Sope Creek (Marietta Paper Mill), Collins-Yardum House, Akers Mill, and Island Ford Lodge landscapes. For the others, potential project impacts are negligible because modern trails currently exist in these landscapes and minor trail adjustments will not damage the integrity of the character-defining features of the landscapes. The Scribner Homesite and Cemetery has an existing trail running through it that will continue to be maintained, and a nonhistoric trail is scheduled for closure, which will improve the landscape's historic character. Existing, modern trails run through the Ivy Mill/Laurel Mill/Roswell Manufacturing Company/Allenbrook House

cultural landscape complex in the Vickery Creek unit, and limited new trail construction is proposed within and near the landscape boundaries. The cultural landscape inventory for these properties documents the existing trails and describes them as noncontributing but not detrimental to the integrity of the landscape. Similarly, none of the proposed trails would have an adverse effect on the setting, association, or feeling of the area. The Hyde Farm historic landscape, located outside the park boundaries, is not considered a part of this project, and its associated trails that run through the park (including to the historic George Power House) will be addressed in a future environmental assessment. Because the impacts to cultural landscapes would be negligible and not measurable (i.e., trail development, adjustments, and future maintenance would not damage the character defining features of the park's cultural landscapes) this topic has been dismissed from further consideration.

THREATENED AND ENDANGERED SPECIES

The development of a comprehensive trail system would not contribute to long-term impacts to threatened and endangered species at the park. A variety of sources were referenced to determine the presence of threatened and endangered species within the project area, including US Fish and Wildlife Services Information for Planning and Consultation, the Georgia Department of Natural Resources, and the park NPS species list (NPSpecies). The species considered in this document are provided in table 1.

At the time of this writing, seven of the eight species from these reference sources either have no potential to occur within the project area or are mobile species whose habitat may likely shift due to species movement (potentially outside of the project area) before ground disturbance. For mobile species, ample habitat options exist within the rest of the park to accommodate the species' needs. According to the US Fish and Wildlife Service (USFWS), there are no ecologically critical areas located within the park boundaries or along the Chattahoochee

Table 1. Federally Endangered, Threatened, and Candidate Species That May Occur in Chattahoochee River National Recreation Area (as of December 2021)

Common Name	Scientific Name	Federal Status	Potential for Species or Habitat in Planning Area	Proposed or Designated Critical Habitat Present in Planning Area
Gulf moccasinshell	<i>Medionidus penicillatus</i>	E	No	No
Michaux's sumac	<i>Rhus michauxii</i> Sargent	E	Yes	No
Monkeyface orchid	<i>Dracula simia</i>	T	No	No
Black-spored quillwort	<i>Isoetes melanospora</i>	E	No	No
Etowah darter	<i>Etheostoma etowahae</i>	E	No	No
Shinyrayed pocketbook	<i>Hamiota subangulata</i>	E	No	No
Cherokee darter	<i>Etheostoma scotti</i>	T	No	No
Pool sprite, snorkelwort	<i>Gratiola amphiantha</i>	T	No	No

T = Threatened, E = Endangered

River (USFWS 2020). Due to the anticipated schedule for trail construction implementation, the National Park Service acknowledges that the location of the plant species may likely move either into or out of the project area by the time groundbreaking occurs. Before trail construction, on-the-ground surveying would be conducted to confirm plant populations' locations. Should federally listed plants be discovered in an area where ground disturbance is proposed, park staff would implement the mitigation measures outlined in chapter 2, including minor reroutes to avoid federally listed plant species. While Michaux's sumac may occur in the planning area, if it is discovered where ground disturbance is proposed, minor reroutes would be used to avoid any impacts to this species. Therefore, the actions proposed under the action alternative may affect, but are not likely to adversely affect, federally listed species, and this topic was not carried forward for further analysis.

RARE PLANT SPECIES

The development of a comprehensive trail system would not contribute to long-term impacts to rare plant species at the park. Plant surveys conducted by the park have identified the following rare plant species within the project area: pink ladyslipper (*Cypripedium acaule*),

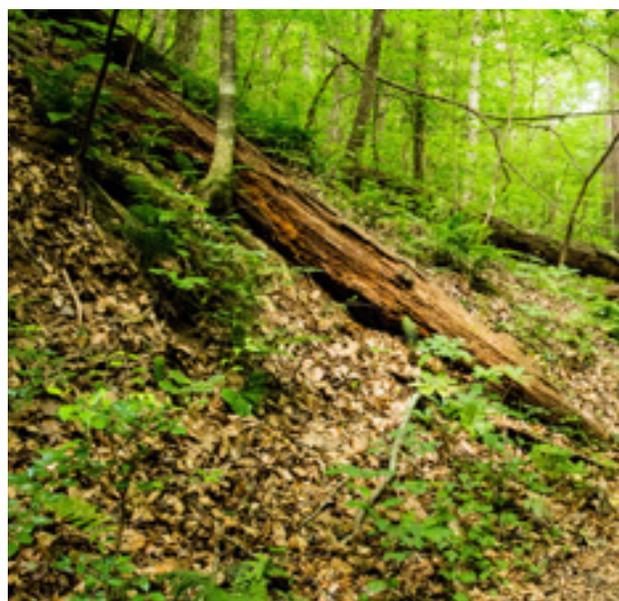


Photo Credit: Shawn Taylor

Georgia aster (*Symphyothrichum georgianum*), Ozark bunchflower (*Melanthium woodii*), American chestnut (*Castanea dentata*), and baystar vine (*Schisandra glabra*). These rare plant species can be found in multiple units within the project footprint, including but not limited to, Bowmans Island East, Bowmans Island West, Cochran Shoals North, Palisades East, and Palisades West. In addition, the following state-protected plants may be

present within the project area: dwarf witch alder (*Fothergilla major*), goldenseal (*Hydrastis canadensis*), and woodland bulrush (*Scirpus expansus*). Based on park observations, these state-protected plants are not within the project footprint, but modifications to the trail alignments could impact these species. Due to the anticipated schedule for trail construction implementation, the National Park Service acknowledges that the location of the plant species may likely move either into or out of the project area by the time groundbreaking occurs. Before construction, on-the-ground surveying would be conducted to confirm plant populations' locations. Should rare plants be discovered in an area where ground disturbance is proposed, park staff would implement the mitigation measures outlined in chapter 2, including minor reroutes to avoid rare plant species. With implementation of these mitigation measures, actions proposed in the plan are not expected to have impacts on rare plant species at a population level, and therefore, this topic was dismissed as an impact topic.

ACOUSTIC ENVIRONMENT AND SOUNDSCAPES

National Park Service Management Policies 2006 and Director's Order 47: Soundscape Preservation and Noise states that the preservation of natural soundscapes associated with national park units is an important component of the NPS mission. The development of a comprehensive trail system would not contribute to long-term impacts on the acoustic environment and soundscapes at the park for several reasons. First, no motorized use would be allowed on trails. Second, the current soundscape already has numerous human influences because each park unit resides within a suburban landscape. Third, new trail construction would likely have temporary impacts on the soundscape while construction activities occur, such as human-caused sounds from equipment, vehicular traffic, and trail crews. Any construction associated with implementation of the action alternatives, such as hauling materials or operating equipment, could result in dissonant sounds, but such sounds

would be localized and of short duration, typically less than a couple weeks in any given spot. After completion of construction, visitor trail use would begin. The presence of visitors on trails would have a negligible impact on natural soundscapes, as the sound of voices rarely carries for any significant distance. Therefore, acoustic environment and soundscapes was dismissed as an impact topic.

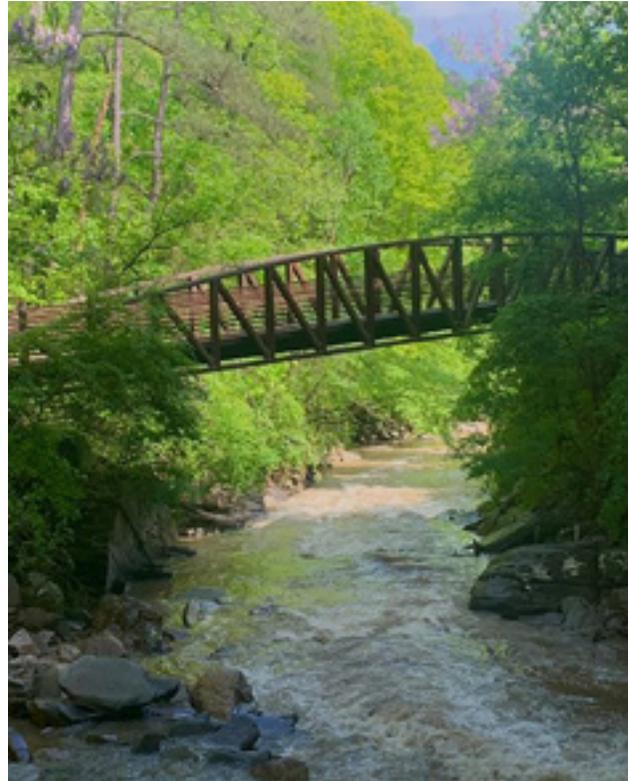


Photo Credit: Katie Monson

WATER QUALITY

The Clean Water Act of 1972 was established to regulate discharges of pollutants into US waters and regulate quality standards for surface waters. The Metropolitan River Protection Act of 1973 established a buffer that protects a 48-miles stretch of the Chattahoochee River between Buford Dam and Peachtree Creek. National Park Service Management Policies 2006 requires protection of water quality consistent with the Clean Water Act. The development of a comprehensive trail system would not contribute to long-term impacts on water quality at the park. New or rerouted trails would not compete with

or dominate hydrologic activity. The impacts of building new trails would be so minor that they would be negligible when compared to the greater impacts of other projects outside of this trails plan. Erosion control methods would be used during ground disturbing construction, which would minimize the amount of sediment that reaches the Chattahoochee River and its tributaries. Several areas of wetlands within the project areas may be affected by the proposed action, which are assessed separately under the “Wetlands” impact topic in chapter 3. Similarly, social trailing could impact water quality, which is assessed separately under the “Soils” impact topic. Water quality could be affected by stormwater runoff because of parking lot expansion, where contaminants such as grease, oil, and antifreeze could be flushed into waterways by rainfall events. Mitigation measures outlined in chapter 3 would reduce overall impacts to stormwater so that the remaining impacts are minor, resulting in a negligible impact. Therefore, water quality was dismissed as an impact topic.

CLIMATE CHANGE

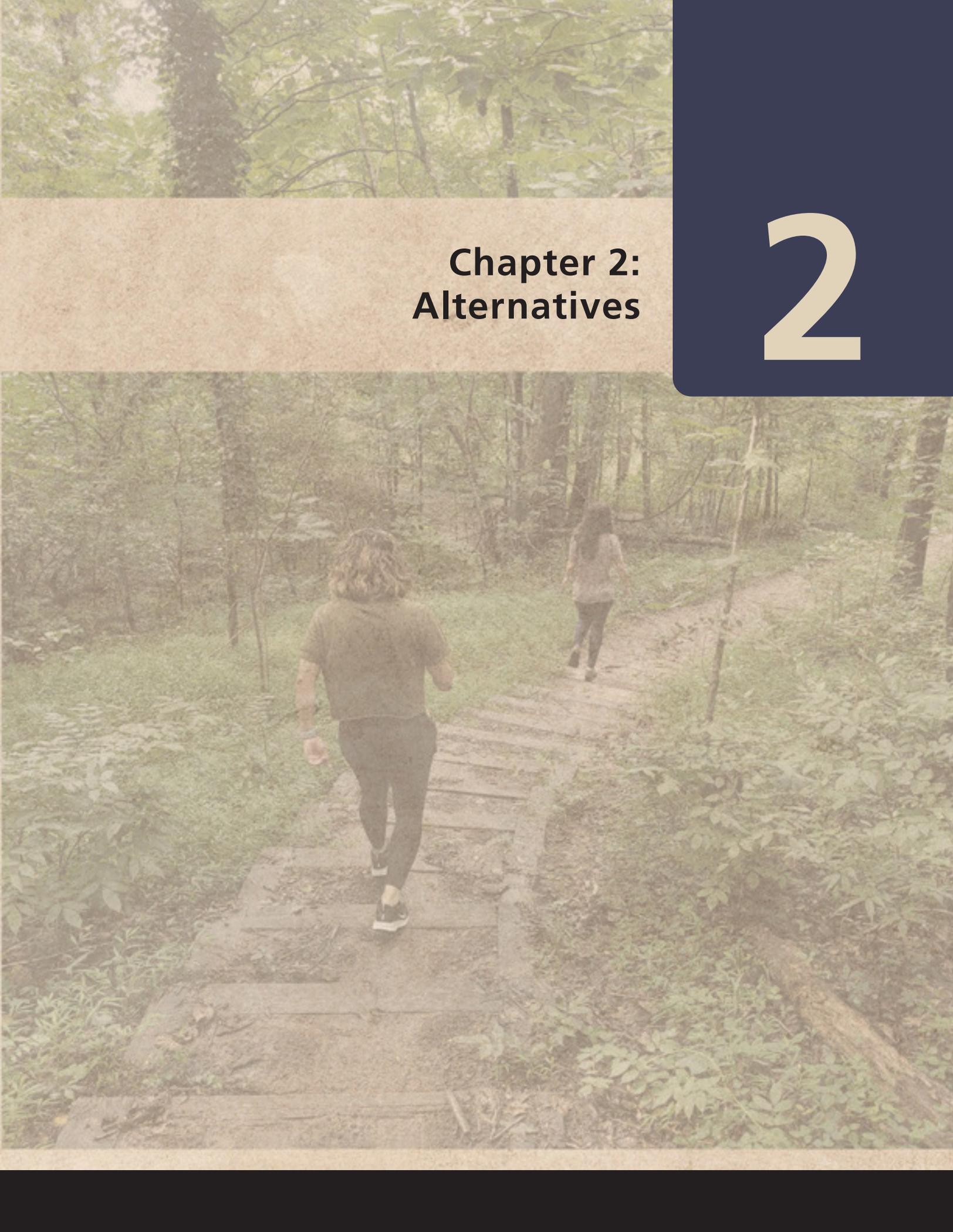
Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, requires the consideration of the effects of climate change in NEPA reviews. Climate change is relevant to this plan, as increased temperatures, more frequent dry periods, and heavier rains all contribute to decreased trail sustainability at Chattahoochee River National Recreation Area (NPS 2015a). The development of a comprehensive trail system will help the park adaptively manage its trails in response to climate change and the associated increased storm frequency and participation amounts. The development of the system would not contribute to long-term impacts on climate change at the park. Construction activities associated with implementation of the action alternative would contribute to increased greenhouse gases emissions, but such emissions would be short term, ending with the cessation of construction. Meaningfully linking the greenhouse gases emissions of such individual

project actions to quantitative effects on regional or global climatic patterns is not possible. Any effects on climate change would not be discernible at a regional scale. Therefore, climate change was dismissed as an impact topic.

AIR QUALITY

The Clean Air Act of 1963 was established to promote the public health and welfare by protecting and enhancing the nation’s air quality. National Park Service Management Policies 2006 directs parks to seek the best air quality possible to “preserve natural resources and systems; preserve cultural resources; and sustain visitor enjoyment, human health, and scenic vistas.” The development of a comprehensive trail system would not contribute to long-term impacts on air quality at the park. Construction activities, including operating equipment and hauling materials, could result in temporary increases in vehicle exhaust and emissions as well as inhalable particulate matter. In various isolated areas, construction activities would have localized effects on air quality. However, the impact to air quality would be rapidly dissipated through air movement, and the effects would be minimal and localized. In addition, the park is in a non-attainment zone, so the impacts from this plan would be minimal. Therefore, air quality was dismissed as an impact topic.

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A photograph of a forest path with two people walking away on wooden steps. The path is made of wooden planks and leads through a dense forest with many trees and green foliage. The lighting is soft, suggesting a shaded forest environment.

Chapter 2: Alternatives

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Photo Credit: Shawn Taylor

Chapter 2: Alternatives

Introduction

This section describes the current trail conditions and proposed parkwide and unit-specific trail management strategies as supported by the maps in appendixes A and B. The current trail conditions provide a basis for which to compare and evaluate the proposed alternatives. This section identifies unit-by-unit proposed changes to the trail system, including new trail construction and natural rehabilitation of portions of the existing system, and presents an approach to address the purpose and need for the trails plan as described in the introduction. The proposed alternatives in this section were derived from recommendations of an interdisciplinary planning team and a contracted trail design firm that used feedback and input from the public and stakeholders during an external civic engagement process. The action alternative was further reviewed by the public during additional civic engagement (see appendix G) and then modified by the planning team. Table 2 summarizes the differences between alternative 1 (the current trail system) and alternative 2, the action alternative/NPS preferred alternative. Corridors identified in alternative 2 for potential use as a part of the RiverLands greenway are also included in the trail mileage.

Table 2. Comparison of Existing and Proposed Trail System by Mileage

Trail Designation	Alternative 1 Current Conditions	Alternative 2
Total miles of pedestrian-only trails*	52.1	77.3
Total miles of multiuse (equestrian and pedestrian) trails	3.2	0
Total miles of multiuse (bicycle and pedestrian) trails**	11.6	21.9
Total trail system mileage	66.9	99.3

* Type 1 and type 3 trails under alternative 2

** Type 2 and type 4 trails under alternative 2

NPS Bicycle Rule

Both alternatives must comply with 36 CFR 4.30 (the Bicycle Rule), which describes regulations that manage bicycle use within national park system units. In 1987, the National Park Service promulgated regulations establishing a management framework for the use of bicycles in park areas. In 2012, the National Park Service revised the process in the regulations for allowing bicycles (77 FR 39927) to focus on park planning and environmental compliance under the National Environmental Policy Act. The National Park Service acknowledges that the use of bicycles in Gold Branch has not been

authorized in accordance with the Bicycle Rule, and continuation of the use described in the no-action alternative without complying with the Bicycle Rule is not legally tenable in the long term.

The Bicycle Rule establishes different procedures for authorizing bicycle use on existing trails, on new trails in developed areas, and on new trails outside of developed areas. Regardless of the scenario, before the superintendent can authorize the use of bicycles, the National Park Service must prepare a planning document that evaluates the effects of bicycle use on the specific trails where bicycles would be allowed. The planning document must evaluate the suitability of trail surfaces and soil conditions for accommodating bicycle use, including any maintenance, minor rehabilitation, or armoring that would be necessary to upgrade the trail to sustainable condition. Lifecycle maintenance costs, safety considerations, strategies to prevent or minimize user conflict, and methods to protect natural and cultural resources and mitigate impacts also must be analyzed.



Photo Credit: Shawn Taylor

An environmental assessment or environmental impact statement must be completed that evaluates the effects of bicycle use in the park and on the specific trails where they would be allowed. An environmental assessment must provide for a 30-day comment period. If significant impact is not found, the superintendent must then complete a written determination stating that bicycle use on the trails is consistent with the protection of the park area's natural, scenic, and aesthetic values; safety considerations; and management objectives and would not disturb wildlife or park resources. The superintendent would then obtain written approval from the regional director of such determination.

New trails requiring construction activities (such as clearing brush, cutting trees, excavating, or treating surfaces) must be developed and constructed in accordance with sustainable trail design principles and guidelines. A special regulation that is promulgated after notice-and-comment rulemaking is required for new trails and for existing trails that require construction or significant modification to accommodate bicycle use if any portion of those trails is outside a developed area. Bicycle use on new trails entirely within developed areas and on existing trails that do not require construction or significant modification to accommodate bicycles may be authorized without the need for a special regulation.

Although some existing trails at the park can continue to accommodate bicycles without construction or significant modification, if the National Park Service selects the preferred alternative, the agency will promulgate a special regulation to designate (1) all trails where bicycle use is authorized and (2) future multiuse greenway corridors within the park after the compliance and planning process is completed. This approach will increase compliance, strengthen enforcement, and decrease public confusion and frustration about where bicycles are allowed. If the National Park Service selects the no-action alternative, rulemaking would not

be necessary under the Bicycle Rule. To continue to allow bicycles on the existing trails, however, the superintendent would need to prepare and publish in the Federal Register a written determination that bicycle use on the existing trails is consistent with the protection of the park area's natural, scenic, and aesthetic values; safety considerations; and management objectives and will not disturb wildlife or park resources. After a 30-day public review period and consideration of public comments, the NPS regional director would need to provide written approval of such determination.

Alternative 1: No-Action Alternative (Continue Current Management)

This section describes what a continuation of current management looks like and serves as a baseline for comparing and considering the proposed trails management plan. Under current management conditions, the park would continue to manage trails without a comprehensive plan for a sustainable trail system. Trails would continue to be managed for visitor experience and desired conditions based upon the 2009 GMP zones in which they are placed, and individual units would not have distinct desired conditions and experiences for trail-based activities. Trail construction, reconstruction, and restoration would occur on

a case-by-case basis. The existing designated trail system would continue to be provided, and undesignated trails would continue to comprise much of the trail system; no changes in allowed trail uses would occur. Trails would continue to be managed and maintained without regard to any specified trail class or maintenance standard. The park would continue to implement temporary trail closures as needed to protect visitor safety and park resources in accordance with the provisions of 36 CFR 1.5. Access to the trail system would continue to occur from a variety of disparate access points with varying levels of signage. Biking is currently allowed on 11.6 miles of trails throughout the park. Throughout this document, the terms "biking" and "bicycles" refer to both traditional bicycles and electric bicycles (or e-bikes), unless otherwise specified.

Maps of the of the designated trail system under alternative 1 (the current system) are included in appendix A. The following table (table 3) summarizes the existing trail mileage, by park unit, at Chattahoochee River National Recreation Area. The table also includes the allowable trail use. Pedestrian-only includes hikers, trail runners, anglers, wildlife watchers, and others traveling by foot. Other use types and where they are allowed are noted.



Photo Credit: Dyna Kohler

Table 3. Existing Trail Mileage and Allowable Use

Park Unit	Mileage of Designated Trail	Allowed Trail Use
Bowmans Island	5.2	Pedestrians and equestrians (3.2 miles of multiuse)
Orrs Ferry	0	NA
Settles Bridge	1.8	Pedestrian only
McGinnis Ferry	0	NA
Suwanee Creek	0	NA
Abbotts Bridge	0.4	Pedestrian only
Medlock Bridge	1.5	Pedestrian only
Jones Bridge	5.0	Pedestrian only
Holcomb Bridge	0.6	Pedestrian only
Island Ford	4.8	Pedestrian only
Vickery Creek	7.7	Pedestrians and bicycles (0.1 miles of multiuse)
Gold Branch	5.5	Pedestrians and bicycles (0.5 miles of multiuse)
Johnson Ferry	3.6	Pedestrian only
Cochran Shoals	20.2	Pedestrians and bicycles (9.4 miles of multiuse)
Palisades	10.8	Pedestrians and bicycles (1.6 miles of multiuse)
Total	66.9	

Alternative 2: NPS Preferred Alternative/Proposed Action

Overview

The park trail system would be redeveloped to improve its overall sustainability, protect the park’s resources, and improve the visitor experience and circulation. The overall mileage of designated trails available for public use in the park would increase substantially, and a focus would be placed on improving the quality of the trails to better serve visitors and achieve greater resource stewardship. Visitor activities such as hiking, walking, exercising leashed pets, wildlife watching, and running would continue on park trails. Bicycling would continue to be allowed on designated trails in the Cochran Shoals unit, Palisades unit, and on trails designated as part of the potential greenway (see the “Greenway” section). The limited equestrian use that does occur at Bowmans Island would be phased out.

Under this alternative, trails have been designed and proposed in consideration of desired

conditions and visitor experiences in the park (see chapter 1) and in consideration of three aspects of trail sustainability. Typically, trail sustainability has focused on the durability of the trail tread or the physical sustainability. This focus has utility, and best practices developed in the construction and maintenance of natural surface trails have served land managing agencies well. However, trails are a facility, just like a road, building, boat launch, or restroom. Facilities must be kept up to an operational standard and in a condition that can be optimally efficient for visitors. To create a sustainable trail facility, the conditions must also be analyzed not only from standpoints of physical sustainability, but also managerial and social sustainability as well.

Under this alternative, physical sustainability—how a trail’s position on the landscape affects its ability to manage water and limit erosion—would be addressed by restoring poorly designed trails to natural conditions, including trails with steep or fall-aligned gradients and trails with very low

gradients in low and flat areas. These trails would be replaced with trails that (1) allow for water drainage without causing excessive erosion by following more gradual grades, (2) are sidehill- or cross-slope-aligned (generally perpendicular to the fall line), (3) incorporate short dips in the trail called grade reversals, and (4) include an outsloped tread.

Social sustainability—how visitors interact with the park and each other—would be addressed by (1) improving the trail tread and access to desirable destinations, (2) generally rerouting trails into corridors better suited to recreation, (3) formalizing access to the trail system through trailheads and trail access points that connect the park with surrounding communities, (4) addressing circulation issues to decrease user conflicts, and (5) improving wayfinding and navigability through intuitive design and signage.

Managerial sustainability—the ability of park staff, partners, volunteers, and contractors to manage and maintain the trail system—would be addressed by (1) designing trails in alignments that require less ongoing maintenance and are therefore less costly to maintain, (2) defining an overarching vision for the trail system that park staff and stakeholders can work toward, and (3) outlining relative priorities for trails-related

projects to guide the investment of time, energy, and financial resources by park staff and partners.

While improving the physical, social, and managerial sustainability of the trail system generally means a shift away from the use of relict roadbeds and utility corridors toward more purpose-built trails, in some cases, these existing routes would continue to be used to minimize new disturbance and protect historic resources. In the case of the potential greenway, many of these previously disturbed corridors would be used where appropriate to minimize new disturbance associated with a wider trail corridor.

Table 4 summarizes the resulting trail mileage under alternative 2. The resulting trail mileage is a summation of existing trails and adopted social trails, plus new trails and minus trail restoration. Approximately 32 miles of trails would be added to the official trail system, resulting in a 48% net increase in trail mileage. These trail additions include potential greenway additions, which would provide more multiuse activities in more park units. Many actions or strategies would apply parkwide, while others are unit specific. Maps of the proposed trail adjustments and resulting trail system under alternative 2 are presented in appendix B and described in the following sections.



Photo Credit: Tom Willson

Table 4. Proposed Trails Management: Alternative 2 Actions and Mileage by Unit

Park Unit	Existing Official Trail Mileage	Trail Designated on Existing Road	Trail Restoration Mileage	New Trail Construction Mileage	Adopted Social Trail Mileage	Proposed Resulting Trail Mileage*	Fully Accessible (subset of proposed total)*	Multiuse—Bicycle and Pedestrian (subset of proposed total)**
Bowmans Island	5.2	0	0.8	5.8	3.4	17.1	0.4	0
Orrs Ferry	0	0	0	0.1	1.5	1.6	0	0
Settles Bridge	1.8	0.2	0.5	3.4	0	4.8	1.6	1.6
McGinnis Ferry	0	0	0	1.4	0	1.4	1.4	1.4
Suwanee Creek	0	0	0	0.2	0	0.2	0.2	0.2
Abbotts Bridge	0.4	0.5	0	2.1	0	3.0	2.7	2.0
Medlock Bridge	1.5	0	0.2	0.4	0	1.6	0	0
Jones Bridge	4.6	1.1	0.8	0.9	0	6.2	2.0	1.4
Holcomb Bridge	0.6	0	0	0.2	0	0.8	0	0
Island Ford	4.8	0	0.6	2.2	0	6.4	0	0
Vickery Creek	7.7	0	4.4	4.7	0	8.0	0.1	0.1
Gold Branch	5.5	0	1.6	1.9	0	5.8	0.5	0.5
Johnson Ferry	3.6	1.3	0	0	0	4.8	1.3	1.3
Cochran Shoals	20.2	0.1	6.3	12.2	0	26.1	4.4	11.9
Palisades	10.8	0	4.2	8.6	0	15.1	2.3	1.6
Totals:	66.9	3.1	19.6	43.9	4.9	99.3	16.8	21.9

*Trail types 3 and 4

**Trail types 2 and 4

Visitor Use Management

This plan incorporates aspects of the Visitor Use Management Framework to develop long-term strategies for monitoring and managing visitor use within the park. Key aspects of visitor use management incorporated into the action alternative include the identification of indicators and thresholds as well as visitor capacities.



Photo Credit: Chattahoochee National Park Conservancy (CNPC)

INDICATORS AND THRESHOLDS

Monitoring in this plan is accomplished through establishment of “indicators” and “thresholds.” Indicators are specific resource or experiential attributes that can be measured to track changes in conditions so that progress toward achieving and maintaining desired conditions can be assessed. Thresholds are the minimum acceptable conditions associated with each indicator. Indicators and thresholds provide park managers with monitoring protocols to ensure desired conditions for resources and visitor experiences are achieved and maintained over time.

The planning team considered many potential indicators but ultimately identified five that are the most important to monitor the effectiveness of the trails management plan. The five issues or topics the indicators monitor include trail condition, social trailing, roadside parking, cultural resource impacts, and visitor conflicts.

The planning team also identified management strategies associated with each indicator. Several of these management strategies are currently in use and may be increased in response to changing conditions. Other management strategies would be implemented upon completion of the plan to ensure conditions do not approach thresholds. Further management strategies would be implemented if and when monitoring indicates that conditions are changing and triggers or thresholds are being approached or exceeded. The impacts of these management strategies are analyzed in chapter 3. See appendix D for detailed descriptions of the indicators and thresholds along with rationales for why the indicator was selected, monitoring protocols, and management strategies that may be used.

VISITOR CAPACITY

Visitor capacity is 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 (IVUMC 2016). By establishing visitor capacities and implementing them with appropriate management strategies, the National Park Service can help ensure that resources are protected and that visitors have the opportunity for a range of high-quality experiences. The management strategies for implementing the visitor capacities for each analysis area are analyzed in chapter 3.

Pursuant to Director’s Order 2: Park Planning, trails management plans are considered implementation-level plans that meet the legal requirement for general management plans (54 USC 100502) to identify and implement visitor capacities for all areas of a system unit. Chattahoochee River National Recreation Area’s trail system has no prior identification of visitor capacity. See appendix E for the visitor capacities that were identified for trails included in this plan. Management strategies associated with the visitor capacities are also identified in appendix E and analyzed in chapter 3.

ADAPTIVE VISITOR USE MANAGEMENT

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. Assessing the outcome of management actions is necessary to ensure management actions are having their intended effects and desired conditions are maintained.

As monitoring of conditions continues, managers may decide to modify or add indicators and/or thresholds if better ways are found to measure important changes in resource and experiential conditions. Likewise, visitor capacities may need to be adjusted over time in response to improved understanding of the relationship between visitor use and impacts to desired conditions. The rationales to adapt any indicators, thresholds, visitor capacities, or their associated management strategies would be documented appropriately, undergo any necessary additional compliance reviews, and be made available to the public.

Trail Types

Park staff has defined a system of trail types (see appendix C). Each trail type has a distinctive use that informs design criteria and guidelines recommended for each trail type. Based on this system, the Chattahoochee River National Recreation Area trail system can be divided into four distinct classes depending on zoning, user type, need for access, and terrain. Trails would be built according to the design standards and/or condition descriptions for the four distinct trail types as established in appendix F. Each trail type has a distinctive use and visitor experience that

informs its design and construction. The park's four trail types are:

- Type 1—Natural surface pedestrian trail
- Type 2—Natural surface multiuse trail (pedestrian and bicyclist)
- Type 3—Universal access trail
- Type 4—Aggregate multiuse trail (pedestrian and bicyclist), which includes the Cochran Shoals Fitness Loop and potential greenway corridors.

Most trails in the park would be type 1 trails constructed of natural tread surfaces. These trails would generally be single lane, although some variance would occur in trail width to limit visitor conflicts, adhere to GMP zoning conditions, and provide for use appropriate to the proposed type of trail. For example, in some areas of Vickery Creek, Cochran Shoals, Palisades, and other higher-use trails, wider trails would be necessary to prevent excessive conflict. In Cochran Shoals, natural-surface type 2 trails would be developed for biking and pedestrian use. Type 3 universal-access trails would be developed or improved to full Architectural Barriers Act (ABA) standards in the Bowmans Island, Abbotts Bridge, Jones Bridge, Cochran Shoals, and Palisades units. The most developed trails in the park would be trail type 4 (the potential greenway and existing Fitness Loop); these trails would be unpaved but surfaced in crushed aggregate or other porous materials and up to 10 feet wide. Appendix C provides details on the variation between trail types. See table 5 for a breakdown of the proposed trail mileage by park unit and type.

Table 5. Trail Classes by Miles and Unit, Alternative 2

Park Unit	Type 1 (miles)	Type 2 (miles)	Type 3 (miles)	Type 4 (miles)
Bowmans Island	13.1	0.0	0.4	0.0
Orrs Ferry	1.6	0.0	0.0	0.0
Settles Bridge	3.1	0.0	0.0	1.6
McGinnis Ferry	0.0	0.0	0.0	1.4
Suwanee Creek	0.0	0.0	0.0	0.2
Abbotts Bridge	0.3	0.0	0.6	2.0
Medlock Bridge	1.6	0.0	0.0	0.0
Jones Bridge	4.2	0.0	0.6	1.4
Holcomb Bridge	0.8	0.0	0.0	0.0
Island Ford	6.4	0.0	0.0	0.0
Vickery Creek	7.9	0.0	0.0	0.1
Gold Branch	5.2	0.0	0.0	0.5
Johnson Ferry	3.6	0.0	0.0	1.3
Cochran Shoals	13.0	8.7	1.2	3.1
Palisades	12.8	0.0	0.7	1.6
Total	73.7	8.7	3.6	13.2

Trailheads and Trail Access Points

Public access to the park’s trail system and connection to local communities would be facilitated by a system of designated trailheads, primary trail access points, and secondary trail access points. Modifications to parking and supporting infrastructure would be handled on a case-by-case basis.

Trailheads. Trailheads are developed areas on federally owned and NPS-managed lands that include a parking lot, trail access signage, and trail access (usually a spur or connector trail that links with the broader trail network). Trailheads may also include other facilities, such as restrooms, waste and recycling receptacles, dog waste bags, shade structures, benches, bicycle racks, picnic tables, and fitness equipment.

No new trailheads would be constructed and existing trailheads would be maintained (i.e., parking lots and trailhead infrastructure would be maintained in place and within the same footprint). The locations of trailheads would be included on park trail maps and other widely distributed wayfinding information. Refer to the maps in appendix B for locations of trailheads.

Primary Trail Access Points. Primary trail access points are undeveloped areas on federally owned and NPS-managed lands that include trail access signage and trail access. These access points typically do not include any other facilities, although they may include benches, bicycle racks, dog waste bags, and other basic amenities. Primary trail access points are typically positioned where the NPS trail system exits (or enters) the park and intersects with an external trail system or municipal sidewalk/path. Primary trail access points also include natural gathering points within the park where trail access occurs, such as at boat launches.

Existing primary trail access points would be maintained, and a few additional points would be designated in strategic locations. The locations of primary trail access points would be included on park trail maps and other widely distributed wayfinding information. Refer to the maps in appendix B for locations of primary trail access points.

Secondary Trail Access Points. Secondary trail access points are areas on lands not owned or managed by NPS and which include trail access

signage and authorized trail access. These access points are typically owned and managed by park neighbors such as homeowners' associations or apartment complexes.

The National Park Service would work with park neighbors to designate authorized secondary trail access points. The park would partner with these neighbors to ensure trail access signage is consistent with signage found elsewhere in the park so that visitors using these access points are aware they are entering NPS lands and are aware of important safety, wayfinding, fee compliance, and regulatory information. The National Park Service and its partners would maintain access to secondary trail access points. The locations of secondary trail access points would not be included on park trail maps and other widely distributed wayfinding information, although they could be shown on maps in the immediate vicinity, including on the signage at the secondary trail access point. Future spur trails that connect authorized secondary access points would be subject to additional compliance and would seek to connect with the park's official trail system via the shortest possible sustainable route. Signage at the intersections of secondary spur routes and official trails would orient visitors to the direction of travel of the official trail. The locations of authorized secondary trail access points and their connecting spurs would be determined in partnership with park neighbors upon implementation of the plan and are therefore not included in the maps in appendix B.

Unauthorized Trail Access. Unauthorized trail access occurs when park visitors access the trail system without using a trailhead, primary trail access point, or designated secondary trail access point. Unauthorized trail access contributes to the creation of unauthorized visitor-created trails, which threaten park resources, negatively impact visitor experience, and are generally not physically or managerially sustainable.

These unauthorized visitor-created trails would be restored to natural conditions as described in the "Restored Trails" section below. National Park Service trail managers would work with

park neighbors to consolidate unauthorized trail access routes into designated primary and secondary trail access points when it is feasible and appropriate to do so.

Trail and Trailhead Naming

Some trails, trailheads, and trail access points throughout the park would be formally named and designated. These names would be used on signage, maps, and other informational materials to improve wayfinding, trip planning, and a sense of place.

Signage and Trail Markers

Trails and destinations would be clearly marked with signs. Signage located at trailheads and trail access points would be standardized and improved to (1) provide an inviting gateway to the park units and inform visitors they are entering an NPS site, (2) set appropriate expectations about the experiences visitors are likely to have, and (3) provide wayfinding information and basic rules and regulations. Trail markers would be installed at trail junctions and destinations as necessary. Where appropriate, existing postholes and disturbed areas would be used for new sign installations, and dog waste stations would be included. Signage design would be coordinated with regional trail systems that intersect with park units and would incorporate multiple languages and symbols to better communicate with the significant non-English-speaking visiting population.

Greenway

The recent Chattahoochee RiverLands Greenway Study (Chattahoochee RiverLands 2020) reconsiders the region's relationship to the river and proposes a 100-mile uninterrupted multiuse linear network of greenways, blueways, and tributary trails connecting people to parks, the river, and other key destinations. The Chattahoochee RiverLands is a collection of Atlanta-area cities, counties, nongovernmental organizations, and federal land managers that are currently planning for a greenway along the Chattahoochee River. The greenway study area spans a 100-mile corridor through the

Metropolitan Atlanta Region, from the Buford Dam area to Chattahoochee Bend State Park in Coweta County. The study area focuses on a 1-mile buffer on both sides of the Chattahoochee River with links to the larger watershed and metropolitan region. The greenway's purpose is to maximize connectivity between Chattahoochee River parks, communities, destinations, and the waterway itself by creating a multiuse, multimodal trail that follows the river. The Chattahoochee RiverLands intends to design the greenway to balance needs of access and conservation.

Since this ongoing partnership effort will likely call for a greenway to be included in many parts of the national recreation area, this comprehensive trails management plan identifies several units where a potential greenway would be appropriate. The unit-specific descriptions below and the maps in appendix B describe the general locations. The potential greenway in the park would be a hardened surface (crushed aggregate or similar), multiuse trail. In some locations that are very wet, a boardwalk or elevated construction may be used. Allowed uses on a potential greenway would include pedestrians and bicyclists, and the width would vary by location, but would generally be between 5 and 10 feet. Any potential greenway inside the national park would not be paved, as is consistent with the Metropolitan River Protection Act, but rather would consist of permeable surfaces to protect water quality, prevent erosion, and present a distinct visitor experience to greenway users. The potential greenway in the park units would be designed to give greenway users the feeling of being in a national park immediately upon entering and a sense of place apart from local parks. The maps in appendix B identify 11.7 miles of potential greenway corridor. The 11.7 miles includes existing portions of type 4 trails in the park that would double as Chattahoochee RiverLands greenway segments.

The potential greenway is included in the trails management plan to aid and direct planning efforts of the Chattahoochee RiverLands group. Any future construction of the potential greenway would be through the efforts of this partnership. Maps in appendix B display the appropriate corridors for the greenway as it crosses NPS lands. These corridors have been selected with consideration to the protection of resources and connectivity to park and external destinations and trail systems. The mileage presented in table 5 includes the multiuse (bicycle and pedestrian) greenway. If the greenway was designated along routes proposed by this alternative, 3.9 miles of existing (or proposed) trail and 3.1 miles of existing roads (or paved walkways) would be converted to greenway and an additional 4.7 miles of new greenway construction would occur. Greenway routes would be established through Settles Bridge, McGinnis Ferry, Suwanee Creek, Abbotts Bridge, Jones Bridge, Vickery Creek, adjacent to Gold Branch and Johnson Ferry, and in Cochran Shoals and Palisades. In total, 11.7 miles of greenway corridor would be opened on park lands. The addition of potential greenway trails on park lands would result in a 101% increase of multiuse trail mileage.

ABBOTTS BRIDGE GREENWAY PILOT PROJECT

The park and the City of Johns Creek intend to partner on the design and construction of an approximately 1.1-mile multiuse (bicycle/pedestrian) greenway segment. The city would secure Federal Highways Administration funding through the Georgia Department of Transportation and Atlanta Regional Commission to design and construct the trail through the park's Abbotts Bridge unit. The resulting greenway corridor would connect the city's future Cauley Creek Park to State Road 120 (Abbotts Bridge Road) through NPS property, primarily along an existing sewer easement. This project would serve as a pilot for new Chattahoochee RiverLands greenway construction on NPS land. Trail design would draw from the trail type 4 (crushed aggregate multiuse trail) specifications outlined in appendix F. Design would be scheduled to begin in 2022, with construction projected for 2025.

Accessibility

All trails and supporting infrastructure, such as parking, routes, built features, and signage, would be constructed and modified according to ABA Accessibility Standards as required, unless the National Park Service determines that a qualifying condition for an exception is met. Technical requirements for trails under ABA Accessibility Standards provide conditions for exceptions to certain standards that apply only to the specific segment of trail where the condition is present. The conditions believed to warrant exception would be documented. If a full length of trail does qualify for exemption, individual segments of the trail must first be documented as meeting exemption conditions. All other reasonable design approaches should be exhausted before using exceptions. Conditions of trails, including length, surface type, typical and maximum running and cross-slopes, minimum tread width, and identification of obstacles, would be shared with visitors through signage, printed and digital media, and staff contact so that visitors can make their own informed decisions about which trails to use.

In addition to the accessibility standards applied to all park trails, the proposed trails management plan has identified opportunities for the development of fully accessible trails in locations where topography could support their installation (i.e., trail type 3 identified above). The maps in appendix B identify approximately 4 miles of fully accessible trail.

Restored Trails

Many of the park's current official trails are not sustainable and/or do not provide a desired trail experience. Under this alternative, many of these trail segments would be restored to natural conditions. Restored trails would be obscured and blocked from public access to avoid continued use. Restoration would include reshaping of soils to pre-trail conditions, planting or transplanting of local/native vegetation, and obscuring the visual corridor. The extent of revegetation, obscuring, and blocking efforts would vary depending on



the location and specific conditions for each route. In some instances, recontouring of the trail may involve placing gravel or clean fill to stabilize the trail. Exposed soils would be monitored for germination and recruitment of nonnative species. Natural recovery by native plant species is preferable to planting or seeding; however, planting or seeding of species that have historically occurred within the park using local genotypes would prevent unacceptable erosion or resist competition from nonnative invasive species. **Planting and seeding of nonnative species would be avoided.** Water management structures would need to be created in this process to eliminate long-term, water-based erosion along these routes. Temporary educational/closure signs may also be placed to discourage use. See appendix F for more detail on trail restoration.

Unauthorized Visitor-Created Trails

Existing unauthorized visitor-created trails, or social trails, in the park would be restored to natural conditions (as described above) or designated as part of the trail system, where appropriate. Unauthorized trails that are not designated on the maps in appendix B as an “adopted social trail” or that do not provide access to a designated secondary trail access point would be restored to natural conditions. One exception is unauthorized trails that

access the riverbank (short “anglers’ trails”), which would generally be left in place due to the impracticality of restoring them. Signage would be added to certain formal angler trails to encourage riverbank access in more stable areas (locations are reflected in appendix B).

Invasive Species Management

Adaptive management may require the use of herbicides to control the spread and infestations of nonnative vegetation. The actions would include the use of hand tools or mechanized equipment to remove the vegetation and may include the use of NPS-approved herbicide to control a population and prevent the establishment and spread of the species. Only a Georgia-certified pesticide applicator would apply herbicide under appropriate environmental conditions and meeting the Integrated Pest Management standards. The herbicide used would vary depending on the target species and would be appropriate for the environmental conditions (e.g., certified aquatic safe when working in wetlands). Staff would monitor and control nonnative invasive species in disturbed areas created by new trail construction, areas with new amenities for trails (i.e., parking lots, boat ramps, restroom), and areas of trail restoration and would utilize early detection and rapid response to remove new occurrences of nonnative species.

Trail Rehabilitation

Some existing trails require a significant investment in one-time rehabilitation work to establish proper drainage, correct a safety concern, or remedy an extremely poor trail condition. This one-time maintenance effort could include earthwork to establish drainage ditches, grade reversals, rock armoring, adding clean fill, and brush clearing. The maps in appendix B note the trails requiring this rehabilitation. These trails would generally follow their current alignment.

Final Alignments for Trails

The new trail alignments shown on the maps are based on field surveys and GIS analysis. The new trail alignments have been determined at the corridor level, defined as a 60-foot-wide corridor within which the new trail would be constructed. The width of the trail tread and shoulders within the corridor would be determined by the trail type see (table 5). Final trail alignments would be determined on the ground upon implementation and in consultation with park natural and cultural resources specialists, which could result in minor adjustments to the trail locations shown on the maps. If a need exists to align a trail outside of the identified corridor, the amended alignment would undergo additional review to avoid or minimize impacts to sensitive resources, and the change would be documented as an amendment to the trails management plan.

Implementation

To successfully implement this trails management plan, the National Park Service would likely hire a full-time trail lead who would work with park staff, contractors, and volunteers to implement the plan actions and conduct routine maintenance of the trail system. Qualified professional trail construction contractors may be hired to complete some of the construction or rehabilitation as needed. Individual volunteers and volunteer groups would continue to provide a valuable service by assisting the park with trail maintenance activities, monitoring trail conditions, providing information to visitors, and protecting resources. Partnerships would be developed to play a maintenance role. The trail lead and volunteer program coordinator would collaborate on implementation efforts. All trail work in the park would follow the guidance provided in the appendix F.

All trails and destinations would undergo routine maintenance activities that would include repair and replacement of trail markers. Some areas may require annual or semiannual maintenance, while other areas may not require maintenance for five or more years.



Photo Credit: Shawn Taylor

New trail development and the restoration of unsustainable trails would take place as funding and staffing allow. Park staff would develop the implementation schedule after this planning effort is complete. Over time, staff could modify the implementation schedule based on funding, staffing, and equipment availability and whether user groups and organizations could partner/assist with trail development and restoration efforts.

The next section describes the site-specific actions in this preliminary trails management plan based on near-term (one to two years), mid-term (three to five years), and long-term (five or more years) action items. These timelines for action reflect the relative priority order of these actions.

Desired Conditions and Zoning

The park’s trail planning effort tiers from the general management plan and provides implementation-level direction for the trails. This alternative refines the desired conditions for trails and provides additional detail to the desired

conditions described in the general management plan. These conditions have been developed for each unit and are described below in association with the unit-specific descriptions of actions.

The desired condition statements include descriptions of the most likely visitor uses in a unit; however, these are not the only uses allowed in the unit. Instead, the descriptions are merely the most appropriate uses, given the conditions, and represent how the National Park Service would manage the unit. The descriptions do not necessarily preclude other allowed uses.

Zone amendments are noted within the individual unit descriptions where they would apply (see the “Relationship to Other Planning” section in chapter 1).

Unit-Specific Descriptions

BOWMANS ISLAND

GMP ZONE

As with alternative 1, this unit’s zone would not change from the 2009 general management plan. West segment trails are in the Natural Area Recreation Zone. East segment trails are in the Natural Zone.

DESIRED CONDITION STATEMENT

West segment. Visitors would experience a quieter and more tranquil setting than in many of the other units, with ample opportunities for solitude, especially on weekdays. A sense of being closer to the North Georgia Mountains would prevail and be reflected in the higher degree of challenge associated with trail-based recreation that excludes equestrian and bicycle use. Opportunities to access the river and riverbank for fly fishing would be plentiful, although the trails would also serve hikers, trail runners, birders, and those accessing bouldering sites.

East segment. Visitors would experience an even quieter and more tranquil setting and more opportunities for solitude as compared to the west segment of Bowmans Island. Visitors would feel like they have space, and they would have a relatively low probability of encountering many other users compared to the west segment or

other units of the park. A sense of being closer to the North Georgia Mountains would prevail and be reflected in the higher degree of challenge associated with trail-based recreation. Any new trails would serve hikers and trail runners seeking a longer and more interesting trail experience with sizeable ups and downs. Trails would provide some access to fly fishing and bouldering sites.

DESCRIPTION OF ACTIONS

Since Bowmans Island is the largest land unit in the park and farthest from downtown Atlanta, opportunities for longer loop circuits and an aerobic fitness challenge would be provided. The unit would accommodate access for river trips and fishing on both sides of the river.

On the west side of the river, three unsustainable and redundant fall-aligned trails on relict roadbeds and one entrenched trail at the base of the floodplain would be restored to natural conditions. New contour-aligned routes on hill slopes would maintain connectivity to facilitate looping opportunities that provide more of a backcountry forest immersion experience with chances for solitude.

On the east side of the river, a designated trail system would be developed to replace the existing unauthorized, user-created system. Around 3.3 miles of relict roadbeds currently used as informal trails would be restored to natural conditions to protect water and landscape quality, and 4.4 miles of sidehill-oriented trails would be constructed in the upper elevations to highlight steep slopes and exposed rock faces. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Bowman's Island.

ORRS FERRY GMP ZONE

All trails are in the Natural Area Recreation Zone under the general management plan. Under this alternative, most of the unit would be rezoned to the Natural Zone, though the area south of State

Route 20 and north of Crayfish Creek would remain in the Natural Area Recreation Zone. The rezone from Natural Area Recreation to Natural aligns with the desired trails conditions of preserving Orrs Ferry as a critical buffer zone and protecting sensitive plant species and wildlife habitat.

DESIRED CONDITION STATEMENT

Visitors would experience a tranquil riverside experience in the Orrs Ferry unit. Natural-surface trails would reflect the unit's primary function as an ecological buffer zone and would minimize disturbance of nearby sensitive resources. Visitors would be able to experience a closeness to nature with a low level of encounters with other visitors and park staff. Trails would provide for easy hiking and river access for anglers.

DESCRIPTION OF ACTIONS

A modest natural-surface trail system would be designated to provide opportunities for hikers and anglers. Management of the area would prioritize its function as a buffer zone to protect the riverbank from development. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Orrs Ferry.

SETTLES BRIDGE GMP ZONE

As with alternative 1, this unit's zone would not change from the 2009 general management plan. Most trails are in the Natural Area Recreation Zone, while a few immediately adjacent to Settles Bridge Road are in the Developed Zone.

DESIRED CONDITION STATEMENT

Both water-based and land-based recreational users would have opportunities to experience the Settles Bridge area. This day-use area would feel connected to surrounding land-based trails and would serve as a convenient place for water trail users to stretch their legs and picnic before, during, or after some time on the river. As such, visitors would encounter other users with some frequency on relatively easy trails. Trails would

provide river access for anglers, as well as connections for short- to medium-distance hikes.

DESCRIPTION OF ACTIONS

The trail system at Settles Bridge would be developed to provide a better complement to the well-maintained boat step-down ramp. Around 1.1 miles of fall-aligned relict roadbeds would be restored to their natural condition to improve water and landscape quality. Parallel to the river, a new route higher on the adjacent hillside would be developed to provide an alternative and higher-quality pedestrian experience as compared to the current use of the utility corridor route. Additional short loops for river users taking breaks at Settles Bridge would be established. The National Park Service would work with Gwinnett County and other partners to provide connections to Settles Bridge Park and integrate the two parks' trail systems. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Settles Bridge.

MCGINNIS FERRY

GMP ZONE

Under this alternative, most of the unit would remain in the Natural Zone, as described in the general management plan. A river-adjacent corridor would be rezoned to the Natural Area Recreation Zone. This rezoning is more in line with the resources of the unit, now a successional forest after once being a Christmas tree farm, and desired future opportunities for the use of a utility corridor as a greenway connection. This unit would have no other trails.

DESIRED CONDITION STATEMENT

While relatively few visitors would use the interior of this unit, as no pedestrian trails would be created, those who do visit would find a pleasant opportunity to experience the outdoors in a former white pine tree farm adjacent to a wetlands complex. Recreational opportunities, including trail hiking and wildlife viewing, would be informal and casual in areas other than the potential greenway corridor, and few other

visitors would be encountered. The unit is a critical connection for the potential RiverLands greenway. If constructed, a more social experience would occur within the corridor, and visitors could expect to frequently encounter others.

DESCRIPTION OF ACTIONS

A designated pedestrian trail system would not be established in McGinnis Ferry. Management of the area would generally prioritize its function as a buffer zone to protect the natural environment along the riverbank as well as wetland areas away from the river. However, future connectivity to the potential greenway could be established via an existing utility corridor through the unit. Refer to appendix B for detailed descriptions of mid to long-term actions, visitor capacity management strategies, and maps of the proposed rehabilitation and development actions and the resultant trail system for McGinnis Ferry.

SUWANEE CREEK

GMP ZONE

The Suwanee Creek area (Gwinnett County side of the river) is in the Natural Zone, and the Rogers Bridge area (Fulton County) is currently in the Historic Resource Zone (per the 2009 general management plan). Under this alternative, a river-adjacent corridor in the Rogers Bridge area would be rezoned to the Natural Area Recreation Zone to align with desired future opportunities for a utility corridor to be used as a greenway connection. This unit has no other trails proposed in either area.

DESIRED CONDITION STATEMENT

The Gwinnett County side of this unit (Suwanee Creek area) does not have a desired trail-based visitor experience. As there is no formal land-based public access to this part of the unit, management of the Suwanee Creek area would be primarily as a buffer zone to protect the riverbank from adjoining development. Most of the unit would be left in a natural condition as much of it is wetland; minimal to no development would occur here. Across the river from the Rogers Bridge Park in the city of Duluth, the area known as the Rogers Bridge area is maintained as

an early successional field where bird-watching is a common visitor activity. The Rogers Bridge area includes a critical connection for the potential RiverLands greenway. If constructed, a more social experience would occur within the corridor, and visitors could expect to frequently encounter others, but no trail connections would occur in the interior of the unit where solitude would prevail.

DESCRIPTION OF ACTIONS

Since most of the Suwanee Creek unit on the Gwinnett County (south) side of the river is not accessible to the public, no designated trail system would be established. Management of the area would prioritize its function as a buffer zone to protect the riverbank from development. Some public access does exist at the Rogers Bridge area of the unit, but the area would also be primarily managed as a natural buffer zone. However, future connectivity to the potential greenway could be established via an existing utility corridor through the Rogers Bridge area. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Suwanee Creek

ABBOTTS BRIDGE

GMP ZONES

As with alternative 1, this unit's zone would not change from the 2009 general management plan. Most of the trails in this unit are in the Natural Area Recreation Zone, while the trails near the boat launch are a part of the Developed Zone.

DESIRED CONDITION STATEMENT

Visitors would have opportunities to experience Abbotts Bridge as individuals and in medium-to-large groups. The area would have a family-friendly and group-friendly atmosphere. Social experiences with friends and family would prevail, while opportunities for solitude and tranquility would occur on weekdays and less-busy times. As many of the visitors to Abbotts Bridge would have little outdoor experience, trail opportunities would be flat and easy. Trails would

primarily serve novice hikers and those looking to stretch their legs after a picnic. Although the pavilion area would continue to have a relatively manicured feel, the trails would introduce "wild" and natural places to visitors who have not had many experiences with natural settings. River users would continue to have access to put-in and take-out areas, as would anglers who occasionally use the trail system.

DESCRIPTION OF ACTIONS

The trail system at Abbotts Bridge would be developed to provide a better complement to the well-maintained boat launch, picnic pavilion, restrooms, and other facilities. Visitors could begin and end various loops from the trailhead. The trail would connect the pavilion, restrooms, and parking facilities, and an easy 1-mile loop around the facilities' periphery would be developed for picnickers and boaters looking for a short walk. The existing trail along the river would be rebuilt using turnpike or some other form of heavy elevated trail construction to provide durable access to the river. Much of the trail in this unit would be built to be more accessible, and some would be built to maximize fishing opportunities. Future connectivity to the potential greenway could be established through both sides of the unit, initially as part of the pilot project described in the "Greenway" section above. Refer to appendix B for detailed descriptions of near- and mid-term actions, visitor capacity management strategies, and maps of the proposed rehabilitation and development actions and the resultant trail system for Abbotts Bridge.

MEDLOCK BRIDGE

GMP ZONE

As with alternative 1, this unit's zone would not change from the 2009 general management plan. All trails are in the Developed Zone.

DESIRED CONDITION STATEMENT

Visitors to this area would have opportunities to rest, access the river, enjoy a picnic lunch, and/or take a short, easy stroll through the forest. A feeling of ease and relaxation would prevail and

serve as a respite from the hustle of the surrounding area. Visits would often be short. Anglers would have plentiful access to the riverbank, and boaters would continue to use the area as a launch. As most of the unit is immediately adjacent to Highway 141, this area would have a developed feel.

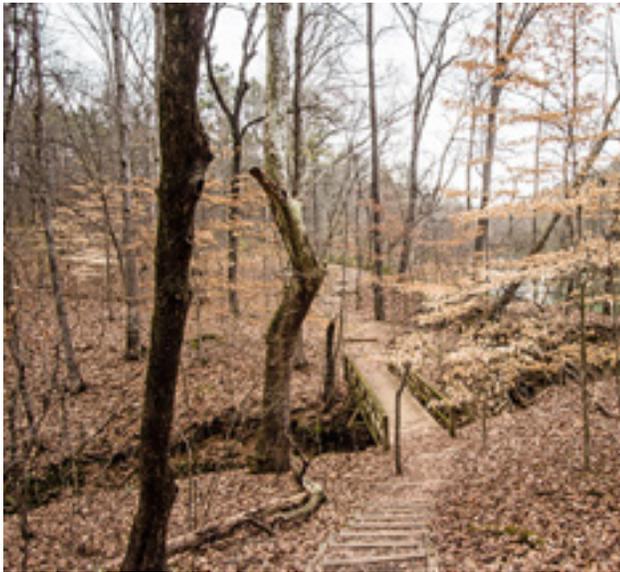


Photo Credit: Shawn Taylor

DESCRIPTION OF ACTIONS

Since Medlock Bridge is a relatively small unit with a trail system, the three fall-aligned trails that access its one hilltop would be simplified and significantly rerouted to achieve a sustainable design that still allows for scenic views. Along the loop and elsewhere, the trail would be realigned to stay in higher and drier areas rather than lower, wet areas. Eventually, the southern spur trail along the river may connect to a trail that sits higher on the hillside to create a much longer stacked loop. The resulting trail system would benefit visitors seeking a longer recreational experience and continue to be valuable for picnickers, leisure hikers, and anglers. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Medlock Bridge.

JONES BRIDGE

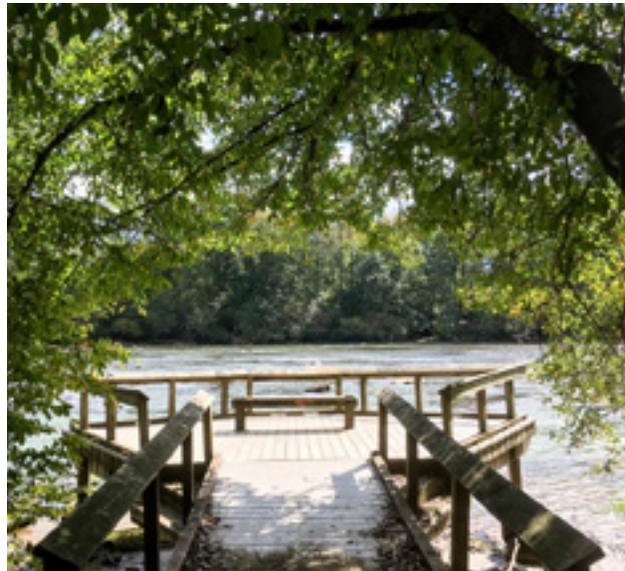


Photo Credit: Shawn Taylor

GMP ZONE

As with alternative 1, this unit's zone would not change from the 2009 general management plan. Most trails are in the Natural Area Recreation Zone, while trails in the vicinity of the Chattahoochee River Environmental Education Center (CREEC) are in the Developed Zone.

DESIRED CONDITION STATEMENT

North segment. Visitors to the north segment of Jones Bridge would have diverse social opportunities to access and enjoy this scenic stretch of the Chattahoochee River. Many of the trail users of this unit would be fishing, although hiking, picnicking, and wading into the river would also be popular recreational activities. Visitors would have ample opportunities to experience the shoals, whether by fishing, viewing, participating in educational ranger-led and special-use programming, or wading. This unit provides one of the best opportunities for visitors to get into the river, and that experience would be readily available. Trail-based opportunities would be easy and serve fitness walkers, dog walkers, anglers, large educational groups, picnickers, and other users.

South segment. Visitors would have opportunities to experience the Chattahoochee River Environmental Education Center/south segment of Jones Bridge as individuals and in medium-to-large groups. The area would have a family-friendly and group-friendly atmosphere, although opportunities for solitude and tranquility would occur on weekdays and less-busy times and as visitors move further away from the education center towards the river. Educational and interpretive experiences would be prevalent and a major focus of this area. As many of the visitors to the CREEC area would have little outdoor experience, trail opportunities would be flat and easy. Trails would serve novice hikers but would also be enjoyable for fitness walkers, dog walkers, avid hikers, and occasional trail runners who may increasingly access this area. Although the area around the education center would have a manicured feel, it would introduce “wild” and natural places for visitors who have not had many experiences with natural places.

DESCRIPTION OF ACTIONS

In the northern portion of Jones Bridge, a new, widely accessible trail would be constructed to loop around the sidehills and take advantage of uplands and small rock outcrops. The trail would encourage trail users to have higher-quality experiences off the existing administrative service road, which currently serves as a part of the trail system. The service road would be removed from officially designated trails and restored.

In the southern portion of Jones Bridge, near the Chattahoochee River Environmental Education Center, several redundant trails would be restored to natural conditions to reduce the maintenance burden, eliminate “microloops,” and improve the ease of wayfinding. The trail system would be simplified to reduce unsustainable trails that tend to “creep,” widen, and contribute to erosion, while maintaining opportunities to experience all areas of the unit and conduct educational programs at the center. Access to the southern portion of the unit near the center would be improved. Refer to appendix B for detailed descriptions of near- and mid-term actions,

visitor capacity management strategies, and maps of the proposed rehabilitation and development actions and the resultant trail system for Jones Bridge.

HOLCOMB BRIDGE



GMP ZONE

All trails are in the Natural Area Recreation Zone under the 2009 general management plan. Under this alternative, most of the unit would be rezoned to the Natural Zone. This rezone aligns with desired trails conditions to focus on solitude and recreation in small groups. Rezoning this unit to Natural Zone will help park managers prioritize the undisturbed forestlands that are the focal point of the unit.

DESIRED CONDITION STATEMENT

Visitors to Holcomb Bridge would have the opportunity to access and enjoy this undisturbed forestland bordered by the Chattahoochee River to the north and Crooked Creek to the west. Trail-based opportunities would be primarily a short, easy stroll through the forest providing respite from the hustle of the surrounding area. Trail opportunities would also serve fitness walkers, dog walkers, anglers, and other users seeking a short trail-based experience. Experiences would tend toward solitude and experiences in small groups.

DESCRIPTION OF ACTIONS

The Crooked Creek Hiking Trail identified in the environmental assessment within the Holcomb Bridge unit was completed in 2019. The City of Sandy Springs recently built the Crooked Creek Hiking Trail, which connects the Holcomb Bridge to the Crooked Creek Park (City of Sandy Springs Park). This sustainably built natural surface foot trail is approximately 1 mile long and navigates around much of the perimeter of the unit. If pedestrian connections to Garrard Landing Park and Holcomb Bridge Park and their associated parking areas are completed by the City of Sandy Springs, a short natural surface trail connecting the recently built loop to these areas could be added. Refer to appendix B for detailed descriptions of mid- and long-term actions, visitor capacity management strategies, and maps of the proposed rehabilitation and development actions and the resultant trail system for Holcomb Bridge.

ISLAND FORD

GMP ZONE

Most trails are in the Rustic Zone under the 2009 general management plan, though trails near the Hewlett Lodge and park headquarters are in the Historic Resource Zone. Under this alternative, the area currently zoned Rustic would be rezoned to the Natural Area Recreation Zone. The Island Ford area is more appropriately managed for relatively high levels of visitation and social experiences, as described in the desired conditions for trails below, and due to the unit's location near Georgia 400; the existence of recreational amenities including large parking lots, a boat launch, picnic area, headquarters, and paved roads; and the ability of the unit's resources to withstand and recover from impacts from visitor use. Managing this area as Rustic for opportunities for solitude is neither realistic nor desirable. Furthermore, future possibilities for inholding acquisitions might lead to an increase in access points to this unit, conflicting with the Rustic Zone's resource condition of limited access. The area currently zoned as Historic Resource would remain so.



DESIRED CONDITION STATEMENT

Visitors would experience diverse trail-based opportunities at Island Ford. Large, loosely organized hiking groups would be able to experience the trails, as would individuals and smaller groups. Visitors would have social experiences such as picnicking and launching and landing on the river with friends and family. Cultural experiences would also be plentiful, as visitors would have opportunities to see and learn about historic resources associated with the Hewlett Lodge, the Civil War, and American Indian life. Trails would provide a diversity of hiking experiences, such as easy hiking to fishing access near the river, and a more moderate effort required for trails in the uplands.

DESCRIPTION OF ACTIONS

At Island Ford, the trail system would be substantially redeveloped to provide opportunities for longer and more meaningful loops that take advantage of available acreage and the central ridge. Additional loops that avoid sensitive resources and hazardous road crossings would be added, and some smaller unauthorized trail loops that rely solely on relict corridors and contribute to erosion and navigation challenges would be restored to natural conditions. Trails would be designed to allow for easy hiking and fishing access near the river and more moderate aerobic effort in the uplands. Navigability and wayfinding would be improved, and access

routes would be made clearer. Trails would access increased riverside viewpoints as well as a few scenic views in the uplands. Two fall-aligned relict roadbed trails and a steep, redundant trail would be restored to natural conditions. Refer to appendix B for detailed descriptions of near- and mid-term actions, visitor capacity management strategies, and maps of the proposed rehabilitation and development actions and the resultant trail system for Island Ford.

VICKERY CREEK



Photo Credit: Shawn Taylor

GMP ZONE

Most trails are in the Rustic Zone under the 2009 general management plan, though trails on the Allenbrook side of Big Creek are in the Historic Resource Zone. Under this alternative, the area currently zoned Rustic would be rezoned to the Natural Area Recreation Zone. Park management over the last several decades has actively managed this unit as one of the park's most popular areas. Zoning this unit as Rustic is inconsistent with this management, which current leadership intends to sustain given the unit's proximity to downtown Roswell and being well positioned for relatively high levels of visitation. This unit benefits from multiple trailheads and primary access points that facilitate safer access to the extensive trail system. The area currently zoned as Historic Resource would remain so.

DESIRED CONDITION STATEMENT

Visitors to Vickery Creek would have access to several trails for hiking and trail running. Trail use would be more fitness oriented than in some of the other units in the park, with difficulties ranging from moderate to hard, though a quiet and relaxed walk in the forest would also be possible. Opportunities to experience the trails in small groups of friends and families would be abundant. Trails would also provide safe opportunities to hike along and fish in Big Creek.

DESCRIPTION OF ACTIONS

At Vickery Creek, the trail system would undergo a full-scale redevelopment and environmental restoration to create a sustainable, manageable trail system with a high diversity of quality trail experiences. Although the unit has less acreage than some of the others in the park, the new trail system would be designed to provide recreationists with longer experiences that create the illusion of being on a larger land unit. Safety issues along Big Creek, including utility pipe crossings, cliffed-out trails, and steep, slick trails would be addressed through trail restoration and reroutes. The redesigned trail system would take advantage of the dynamic topography, while avoiding sensitive resources and fall-aligned and steep gradient trails. About 4 miles of fall-aligned relict roadbeds would be restored to their natural condition, while around 3.2 miles of contour-aligned roadbeds would undergo heavy maintenance to better manage water.

At Allenbrook, the trail system would be adjusted to provide connectivity to the Roswell Historic Gateway Project trails, and efforts would be made to improve visitor safety as well as the experience of climbers and pedestrians at Lovers Leap. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Vickery Creek.

GOLD BRANCH



Photo Credit: CNPC

GMP ZONE

As with alternative 1, the unit's zone would not change from the 2009 general management plan. All trails are in the Natural Zone.

DESIRED CONDITION STATEMENT

Visitors would experience a quieter and more tranquil setting than in many of the other units, with some opportunities for solitude. The unit would feel different from many of the other units at Chattahoochee River. The unit's large geographic area, along with the low density of the surrounding area, would lend a low-density mountain backcountry feel to the Gold Branch trails, and a diverse range of challenging trail experiences would enhance this feel. The trail system would use the topography to provide active and scenic opportunities for birding, hiking, and trail running, including longer duration hikes and runs that include both ridgetop and water-adjacent trail experiences.

DESCRIPTION OF ACTIONS

At Gold Branch, the trail system would be redesigned to take advantage of the significant topography and be more conducive to hiking and running. Design would leverage the unit's

large geographic area to create longer, more meaningful trail loops with a higher degree of challenge while decreasing the number of intersections. Four fall-aligned relict roadbeds would be restored to natural conditions. To emphasize access to the forested backcountry setting and Bull Sluice Lake, 1.8 miles of contour-aligned trails would be constructed. To protect and enhance the backcountry-style setting, alternative access via primary and secondary trail access points would be minimized, but the existing parking lot at the main trailhead would be expanded. Overall, the design would increase the sense of formality of the trail system to increase compliance with on-trail use and federal regulations. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Gold Branch.

JOHNSON FERRY

GMP ZONE

As with alternative 1, the unit's zone would not change from the 2009 general management plan. Trails near the Johnson Ferry North Trailhead are in the Developed Zone, while trails further to the north are in the Natural Area Recreation Zone. The Hyde Farm area of this unit would remain in the Historic Resource Zone. Johnson Ferry South is in the Rustic Zone.

DESIRED CONDITION STATEMENT

Johnson Ferry North:

Visitors would experience diverse trail-based opportunities in the north portion of Johnson Ferry. Visitors would be able to experience the trails as individuals and in smaller groups and would have social opportunities around the boat launch and covered pavilion. Cultural experiences would be plentiful, as visitors would have opportunities to experience the Hyde Farm cultural landscape—including 20th-century historic structures, terraced fields, and woodlands—as well as the 19th-century river crossing site of Johnson Ferry. Trails would provide diverse hiking experiences, including



Photo Credit: Shawn Taylor

easy hiking and fishing access near the river, and more moderate effort required for future trails in the uplands near the Hyde Farm. Development associated with the concession operation, including raft and kayak rentals, is appropriate.

The ongoing “Hyde Farm Trail and Environmental Assessment” (incorporated here by reference) would determine actions in the northern portion of the Johnson Ferry unit. Under all action alternatives in that plan, a new trail would be constructed through the unit to connect the existing formal trails with Hyde Farm and the floodplain bottomlands. Any rezoning related to this connector trail would be addressed separately in that plan.

Johnson Ferry South:

Visitors would experience a tranquil and relaxed atmosphere in the southern portion of Johnson Ferry despite the proximity to adjacent neighborhoods and major transportation corridors. Natural surface trails would offer visitors a unique opportunity to explore wetland complexes throughout the unit. Visitors would be able to experience a low to moderate level of encounters with other visitors and park staff. Opportunities for social activities would still be available at the pavilion. Trails would provide for easy hiking and wildlife viewing.

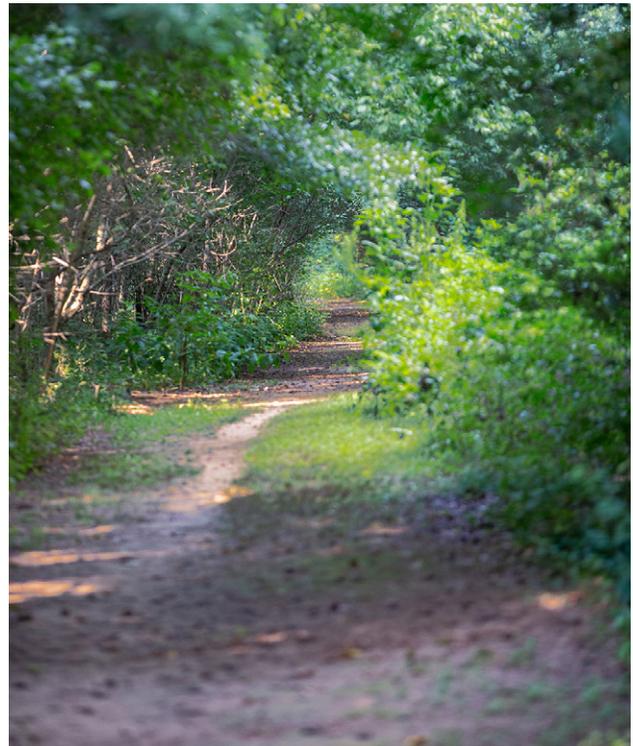


Photo Credit: Harris Clayton

DESCRIPTION OF ACTIONS

Existing trails in the southern portion of this Johnson Ferry, where current use is low, would remain unchanged and continue to allow visitors access to explore wetland complexes throughout the unit. The parking lot and pavilion would also remain unchanged, with an expectation that the parking would serve both the trails in Johnson Ferry South and as a second parking options for cyclists wishing to access Cochran Shoals via Columns Drive to the south. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Johnson Ferry.

COCHRAN SHOALS

GMP ZONE

As with alternative 1, this unit’s zone would not change from the 2009 general management plan. Most of the trails are in the Natural Area Recreation Zone, while trails near the Sope Creek Mill ruins are in the Historic Resource Zone.



Photo Credit: Shawn Taylor

DESIRED CONDITION STATEMENT

Visitors to Cochran Shoals would experience a fun, social, fitness-oriented trail system throughout the unit. The trail system would feel welcoming to a wide diversity of visitors with varying ability levels and would function as an urban backyard for frequent visitors. These frequent visitors would develop connections with the place and with each other. A high density of visitors would be expected at most times, especially on weekends. Encounters with other visitors would be consistent and frequent. Trail difficulty would range from flat and easy on the Fitness Loop to moderate and more difficult in the Sope Creek area. The trails would serve casual walkers, hikers, birding groups, trail runners, and bikers, many of whom are visiting for a morning, lunchtime, or evening workout. The trail system would be intuitive and sustainable.

DESCRIPTION OF ACTIONS

At Cochran Shoals, the most highly visited unit within the park, the trail system would undergo a full-scale redevelopment and environmental restoration to create a sustainable, manageable trail system with a high diversity of quality trail experiences. As bicycles are allowed in many areas of the unit, the redesign would separate

user groups as much as possible by overlaying two largely separate trail networks—one for pedestrians and the other for bicycles and pedestrians (multiuse)—that allow different user groups to achieve their desired experiences (fitness, mileage, and challenge versus efficient direct travel) and feel welcoming to users of all ability levels. Trail intersections and points of conflict would be reduced to the greatest extent possible, and directional travel would be used in some locations to create a more intuitive system. An adaptive management strategy would be implemented to manage multiuse trails in the Cochran Shoals unit. To execute the strategy, the park would initiate more active monitoring of capacity and user conflicts on the multiuse trails. If monitoring indicated overuse or an unacceptable level of conflicts on multiuse trails (i.e., between pedestrian and cyclists), the park would respond by instituting bidirectional traffic requirements (i.e., pedestrian traffic to move counterclockwise, cyclists clockwise), alternate day use (i.e., pedestrian only on even days, cyclists only on odds), or complete separation of trail segments into cyclist-only and pedestrian-only segments (see appendix D).

The total trail mileage would increase in the Sope Creek area. In the Powers Island area, some problematic trails would be restored, and a desirable loop around the perimeter would be created to attract more hiker use. In the Gunby Creek area, a more usable system attractive to a wide diversity of users would be developed to relieve some of the use pressure on the Sope Creek area. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Cochran Shoals.

PALISADES

GMP ZONE

Most trails are in the Natural Zone under the 2009 general management plan, though a corridor along the Rottenwood Creek Trail is in the Developed Zone. Under this alternative,

the portion of the unit west of the river would be rezoned to the Natural Area Recreation Zone. Due to its location inside the Atlanta Perimeter (Interstate 285), the west side of the Palisades would be managed to accommodate the relatively high demand that is associated with easily accessible, green open space in an urban environment. In addition to easy vehicular access from multiple parking areas, connector trails like the Rottenwood Creek and Mountain to River Trails allow for multimodal pedestrian access and link to the greater regional trail network. The portion of the Palisades east of the river would remain in the Natural Zone, while the corridor along the Rottenwood Creek Trail would remain in the Developed Zone.



Photo Credit: Harris Clayton

DESIRED CONDITION STATEMENT

Despite its location inside the Atlanta Perimeter, the Palisades unit would have a rustic, forested feel evocative of the North Georgia Mountains. Visitors would have opportunities to connect with nature and experience solitude in relative

peace and quiet, despite high visitor use at times. The trail system would feel welcoming to a wide diversity of visitors. Trail difficulties would range from challenging hill climbs on the Indian Trail and Akers Mill Trail to more moderate riverside walks in the Whitewater area. Visitors would have opportunities to experience some of the iconic scenery in the park as well as the biodiversity the Palisades have to offer. Trails would serve hikers, fitness walkers, and dog walkers. The trail would be sustainable.

DESCRIPTION OF ACTIONS

At Palisades, the trail system would undergo a full-scale redevelopment and environmental restoration to create a sustainable, manageable trail system with a high diversity of quality trail experiences. Wayfinding would be improved significantly to reduce the navigational challenges many visitors experience here. Many trails would be relocated from ridgetops to hillsides. The redesign of the Palisades trail system would highlight the area's topography as well as the unit's primary attractions, including river overlooks, a large diversity of rare native plants, a nonnative bamboo stand, and beach areas, while maintaining its unique character. These destinations would serve as anchor points for the trail system. More river overlooks would be added to the system on the west side of the river, similar to the existing observation deck on the east side of the river. Wayfinding to the popular bamboo stand would be improved, and the area would be highlighted as a destination and designated as a "quiet area" to provide a unique visitor experience. The total trail mileage would remain about the same and would be tied to the redesigned parking area that is under development at the Indian Trailhead. In the future, connectivity between east and west Palisades could be considered via a pedestrian river crossing. Refer to appendix B for detailed descriptions of near-, mid-, and long-term actions; visitor capacity management strategies; and maps of the proposed rehabilitation and development actions and the resultant trail system for Palisades.

Mitigation Measures Applied to Alternative 2 (NPS Preferred Alternative)

Mitigation measures are the practicable and appropriate methods that would be used under the action (NPS preferred) alternative to avoid and/or minimize harm to park natural and cultural resources, visitors, and the visitor experience. The following mitigation measures have been developed to avoid or minimize potential adverse impacts from implementation of the trails management plan.

General

- According to NPS Management Policies 2006, for all trail construction activities, park staff would strive to apply sustainable practices to minimize potential environmental impacts. New or rerouted trails would not compete with or dominate park features or interfere with natural processes, such as the seasonal migration of wildlife, forest regeneration, hydrologic activity, and geological processes. All trail work would emphasize environmentally sensitive construction, use of nontoxic materials, resource conservation, and recycling.
- In areas where additional improvements to infrastructure are necessary, existing trailheads and previously disturbed areas would be used where practicable to avoid or minimize new impacts to natural and cultural resources in the park.
- Resource management staff would provide all contractor employees and volunteer trail crews with information that would appraise them of and sensitize them to relevant natural resource issues and the importance of minimizing impacts. This information could be shared in person, via contract language, or as part of an informational package. Trail crews would be educated about the importance of avoiding impacts on sensitive resources that have been flagged for avoidance, which may include natural and cultural resources. The resource management division would be notified and consulted when wildlife must be disturbed or handled.
- Construction zones for rerouted and new trails, as well as staging areas and work zones, would be identified and demarcated with construction tape or some similar before any construction activities begin. The tape would define the zones and confine the activity to the minimum area needed for the trail work. No disturbance would occur beyond these limits other than protection measures for erosion/sediment control.
- All tools, equipment, surplus materials, and rubbish would be removed from the project area upon project completion. Construction debris would be hauled from the park to an appropriate disposal location.
- Signs or other means would be used to protect sensitive resources on or adjacent to trails and destinations.
- Visitors would be informed of the importance of protecting the park's natural resources and leaving these undisturbed for the enjoyment of future generations. Leave No Trace and Tread Lightly! materials would be posted at the visitor centers and online and distributed as appropriate.
- Impervious surfaces would not be used on trails.

Visitor Safety

- Construction activities would be scheduled to minimize construction-related impacts on visitors. Areas not under construction would remain accessible to visitors as much as is safely possible.
- The National Park Service would implement measures to reduce adverse effects of construction on visitor safety. Measures may include, but are not limited to, noise abatement, visual screening, and directional signs that aid visitors in avoiding construction activities.
- Per NPS standards, NPS trail crews would coordinate and supervise any trail

construction or maintenance. Specifically, the National Park Service would monitor and/or direct placing the water bar; placing drainage; brushing and clearing; revegetating; identifying where to obtain fill and other materials for trails; and determining how to apply fill materials such as soil, gravel, and rocks. The park's sustainable trail guidelines (see appendix F) will guide trail construction and maintenance.

- To minimize the amount of ground disturbance, staging areas would be in previously disturbed areas, away from visitor use areas to the extent possible. All staging and stockpiling areas would use existing disturbed lands to the extent possible and be rehabilitated to natural conditions following trail construction work.
- The park would implement timely and accurate communication with visitors, such as changes to programs, services, sites, or permitted activities via news releases, visitor contacts, the park website, social media, and signage.

Natural Resources

- Removing or impacting native vegetation adjacent to trails would be minimized as much as possible to protect native plants and prevent the spread of nonnative species. The spread of invasive vegetation that results from removal of and impacts to native vegetation would be monitored and treated.
- Construction equipment would be inspected and properly cleaned to remove dirt and debris that may harbor nonnative species before being delivered to the park.
- New and existing trails would avoid rare plant species or large tracts of forest areas with high diversity and quality. Two actions would occur to verify the presence of rare plants in proposed trail areas. First, a review of historical plant data and a site survey should be conducted by park natural resource staff. Secondly, a site survey, upon initial flagging of a proposed trail alignment,

will be conducted to identify rare plants or sensitive vegetative communities where initial review may identify the presence of sensitive species. The survey will be conducted by qualified park or contract professionals to identify conditions in a trail planning area with a 100% visual survey of the proposed alignment.

- The establishment of buffers based upon vegetation sensitivity will be conducted for each trail project, as conditions deem necessary, by the trail lead in coordination with the park natural resource staff.
- Areas under ecological restoration should be identified during initial trail planning to minimize disturbance to the restoration process.
- Revegetation efforts would strive to reconstruct the natural spacing, abundance, and diversity of native plant species in the trail corridor. No foreign materials with the potential to introduce invasive plant species would be brought into the area. The spread of invasive species would be reduced by using local ecotypes for native plantings and seeing when possible. At new and improved river access sites, install interpretive signage to help prevent the spread of aquatic invasive species (i.e., boat cleaning prior to river entry).
- Qualified biologists would conduct studies to determine if rare, threatened, or endangered state or federally listed species are present before ground disturbance to avoid disturbance and ensure appropriate locations and design of facilities.
- All crew members and volunteers assisting in the trail work efforts would be educated about the importance of avoiding impacts on sensitive resources that have been flagged for avoidance.
- New and existing trails would avoid sensitive areas where a rare and/or endangered plant or animal species or its known habitat exist. Care would be taken not to disturb any other sensitive wildlife species (reptiles, migratory birds, raptors, and bats) found nesting,

hibernating, estivating, or otherwise living in or immediately near the worksites. Resource management personnel would be notified/consulted when wildlife must be disturbed or handled.

- Vegetation and tree removal work would be sensitive to seasonality to avoid impacts to roosting, breeding, and nesting species to the maximum extent practicable.
- Trails should also avoid seasonal nesting areas or the park will adhere to seasonal park policy, such as temporary closures, for trail use or tree clearing in specified areas. A review of site conditions where sensitive habitats may exist within the trail planning area will be conducted with the park biologist and if necessary, with the US Fish and Wildlife Service. If conditions exist, buffers will be established, based on habitat sensitivity, where (1) trails are excluded, (2) temporary seasonal closures would be required, or (3) limitations on seasonal construction will be established. When resource conditions are within areas with multiple jurisdictions or require additional expertise, the park biologist may request additional reviews of conditions with partner biologists. Viewing of distinct park features should also be identified during site assessment and the feasibility for visitor access. Consultation with the US Fish and Wildlife Service is to be conducted for each trail project site during implementation to evaluate impacts to any special status species and their habitat.
- Implement dog-on-leash rules and use signage to keep users and dogs on trails to avoid disturbance to wildlife.
- Following completion of construction activities, all areas of disturbed soils and vegetation would be regraded and revegetated as soon as possible. Natural topographic features would be restored to the extent possible using local excavated soils or from other park projects, and native species would be used in all revegetation

efforts. Restoration efforts would be maximized by using salvaged topsoil (or clean fill) and native vegetation and by monitoring revegetation success for several growing seasons as appropriate. Undesirable species would be monitored, and control strategies initiated if needed.

- Measures to control dust and erosion during construction could include the following: watering dry soils; using silt fences and sedimentation controls; stabilizing soils during and after construction with specially designed fabrics, certified straw, or other materials; covering haul trucks; and revegetating disturbed areas with native species as soon as possible after construction, with measures taken to avoid introduction of invasive species
- Consider soil conditions when determining the final layout of a trail, including soil type, susceptibility to erosion, drainage and permeability characteristics, and its compatibility for recreational use. The US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey information for Chattahoochee River National Recreation Area will be used as the primary reference. Additional site evaluation, as deemed necessary by the trail lead, will be conducted if survey information is not available or identified conditions are averse to a sustainable trail. When adverse trail conditions are identified in the soil survey information, the park will identify alternative options for trail design and its implementation, including (1) aborting the trail (new or existing), (2) designing the trail with modifications that address adverse soil conditions, or (3) designing the trail as planned.
- Where trails are proposed in disturbed or previously developed areas of the park, considerations and verification of the following items should be included: presence of utilities, established right of ways, remaining structures, cultural or

- archeological significance, and presence of hazardous materials or contaminated conditions. If any of these conditions exist on the proposed site, a determination of impact and trail alignment options will need to be developed to address the conditions present.
- The riparian buffer zones or setbacks of trails adjacent to or crossing rivers and streams will be considered during site planning, including the buffer established by the Metropolitan River Protection Act, which protects a 48-miles stretch of the Chattahoochee River between Buford Dam and Peachtree Creek. The trail location outside of the established riparian function buffer zone will be established whenever feasible. If trails are sited for river viewing purposes within the riparian function buffer zone, adherence to the Chattahoochee River Streambank Stabilization Plan guidance will be reviewed.
 - Trails should have minimal river/stream crossings along a segment, which should be avoided where possible to minimize impacts to the stream. Where a crossing is necessary, evaluation of the stream quality and resource sensitivity should inform the design and location of the crossing. Stream crossings should be located at riffle areas instead of at pools or meanders, as riffles are relatively stable, have the coarsest substrate, and can best accommodate a crossing (IMBA 2004). All stream crossings will be evaluated in compliance with Director’s Order 77: NPS Benefits Sharing.
 - Healthy trees of any size should not be removed except where they interfere with trail traffic and/or the trail cannot be relocated to eliminate the interference. Healthy trees over 12 inches diameter breast height should remain, and the trail should be routed to avoid being placed within the area directly under the outer circumference of the tree branches (i.e., the dripline). When branches extend over the trail, the corridor would follow the vertical trail clearance standards.
 - Comply with NPS soundscape preservation and noise management requirements (i.e., Director’s Order 47: Soundscape Preservation and Noise Management and NPS Management Policies 2006).
 - Implement standard noise abatement measures during construction.
 - Vehicles and equipment idling times will be limited when parked to reduce emissions.
 - The contractor will not leave vehicles idling for more than five minutes.
 - Install storm drain protection devices (e.g., hay bales, “pigs,” socks, or drain covers) around or over storm drain inlets when doing any construction or maintenance work within 25 feet of the inlet(s).
 - Designate a washout area on the job site in a grassy or graveled area where pooled water can soak into the ground. Never wash out on a street or paved area or near a storm drain.
 - If no washout area is available, wash out into a container (5-gallon bucket or wheelbarrow) and dispose of material properly.
 - Incorporate low impact development and/or infiltration techniques into new construction or reconstruction of existing, impervious areas such as rain gardens, constructed wetlands, infiltration swales or basins; grass (or vegetated) filter strips or swales, tree islands or planters, permeable pavement, and surface sand filters.

Wetlands

- Mitigation measures would be applied to protect wetland resources. Once a management strategy has been selected, a survey would be performed to certify wetlands within the project area and to identify locations of wetlands and open water habitat more accurately. Wetlands would be delineated by qualified NPS staff or certified wetland specialists and marked before any construction starts. All pathway construction facilities would be sited to avoid wetlands, or if that were not feasible, to otherwise comply

with Executive Order 11990, the Clean Water Act, and Director's Order 77-1: Wetland Protection. Additional mitigation measures would include the following, as appropriate:

- Employ standard avoidance, minimization, and mitigation strategies.
- Avoid wetlands during construction, using bridge crossings or retaining walls wherever possible. Increased caution would be exercised to protect these resources from damage caused by construction equipment, erosion, siltation, and other activities with the potential to affect wetlands. Measures would be taken to keep construction materials from escaping work areas, especially near streams or natural drainages.
- Use elevated boardwalks over wetland sections where it is not feasible to avoid the wetland or apply feasible mitigation measures. Boardwalks along shorelines would be placed on helical piers or other elevated structures that can be periodically shifted toward the water to maintain the shoreline experience as isostatic rebound occurs.
- Design footbridges in such a way as to completely span the channel and associated wetland habitat (i.e., no pilings, fill, or other support structures in the wetland/stream habitat). If footbridges could not be designed in such a way as to avoid wetlands, then additional compliance (e.g., a wetland statement of findings) would be done to assess impacts to wetlands and ensure no net loss of wetland area.
- The design process will evaluate opportunities to improve wetland conditions and quality when trail elements are located adjacent or within a suspected wetland.
- Boardwalks, fences, signs, and similar measures would be used to route people away from sensitive resources, such as wetlands or riparian habitats or historic resources, while still permitting access to important viewpoints.

- Upon final design and if warranted, a formal delineation and any applicable Clean Water Act permitting would occur before groundbreaking.

Cultural Resources

- The park would execute a programmatic agreement in coordination with consulting parties, including the state historic preservation officer and affiliated tribes, which would describe historic identification actions as well as minimization and avoidance practices should it be determined that a proposed action may impact a historic property. The programmatic agreement would focus particularly on archeological resources but would also cover cultural landscapes and historic roads. The agreement is under development with the Georgia State Historic Preservation Office and consulting tribes and will be finalized and included as part of the decision document for the trails plan.
- Before construction begins, the recreation area would conduct an archeological survey along the potential route of any new trails to identify currently unknown and significant archeological resources so that they may be avoided. If the effects on resources could not be avoided or minimized within the trail corridors developed for this plan, further consultation with the state historic preservation officer and the Advisory Council on Historic Preservation according to 36 CFR 800 would be conducted, as necessary, to resolve an appropriate alternative.
- Should construction unearth previously undiscovered cultural resources, work would be stopped in the area of discovery, and the park would consult with the state historic preservation officer and the Advisory Council on Historic Preservation, as necessary, according to 36 CFR 800.13. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during

construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

- The park will consult with subject matter experts (cultural resource management team) about trails within close proximity to cultural resources.

Trail Development and Management

- All new trails and reroutes of existing trails would employ sustainable trail techniques and be constructed according to the design parameters outlined in the Chattahoochee River National Recreation Area Sustainable Trail Guidelines (see appendix F). Trail class designations are identified in appendix F and inform the above prioritization and all other trail work.
- In the event that resource thresholds are exceeded in a given area, the park would implement corrective measures to minimize resource impacts, which may include trail closures for periods of time, requiring trail permits or other management actions (see “Appendix D: Indicators and Thresholds”).
- The National Park Service would audit and update compliance, if necessary. Such actions would be conducted in a manner consistent with Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-Making, section 3.3(c).

Staffing and Cost Estimates

Implementation of the preferred alternative would be subject to available funding and staff and would be done in a phased manner as resources allow. The park would create a strategy to guide the phased approach following this planning effort.

Chattahoochee River NRA has a long history of successful philanthropic partnerships, including collaborative projects that have funded trail construction and design (this comprehensive trails plan included). In recent years, the Chattahoochee National Park Conservancy, the

park’s primary philanthropic partner, and the Trust for Public Land donated over \$100,000 for an initial parkwide trail assessment. The Chattahoochee National Park Conservancy has also raised over \$50,000 with partners REI Co-op, Inc. and MTB Atlanta to rehabilitate the popular Cochran Shoals/Sope Creek Multiuse Trail.

The park also relies on a dedicated and active volunteer corps to support ongoing trail maintenance. On average, the park logs over 30,000 volunteer hours each year, and approximately 20% (6,000 hours) of park volunteerism is dedicated to trail projects. This represents a sustained interest from site steward partnerships and an average annual donation of more than \$210,000 in-kind trail maintenance services from park volunteers.

Building on the legacy of trail-centered philanthropy and volunteerism, the park plans to work with partner and volunteer groups to fund, construct, demarcate, monitor, and maintain the trail alignments set forward in the preferred alternative. This reliance on partner resources and fundraising for trail system improvements is a basic tenant of this planning effort. Alternative 2 is a roadmap for trail system improvements in the park over the next 20 years of implementation. Park partners advocating for trail improvements and neighboring trail system managers should look to the proposals of the alternative when considering opportunities for fundraising and making external connections to park trail systems. This is particularly true of one-time costs for design, further compliance, and construction of the greenway and the improved/additional multiuse (type 2) trails in Cochran Shoals. These proposals will not be implemented without partner funding. One-time costs for these projects will not be borne by the National Park Service and are presented separately in table 6.

The costs and operation implications of the alternatives are an important consideration in comparing them and determining their advantages and disadvantages. The costs and staff needs presented in table 6 are estimates for comparison purposes only and are not to be

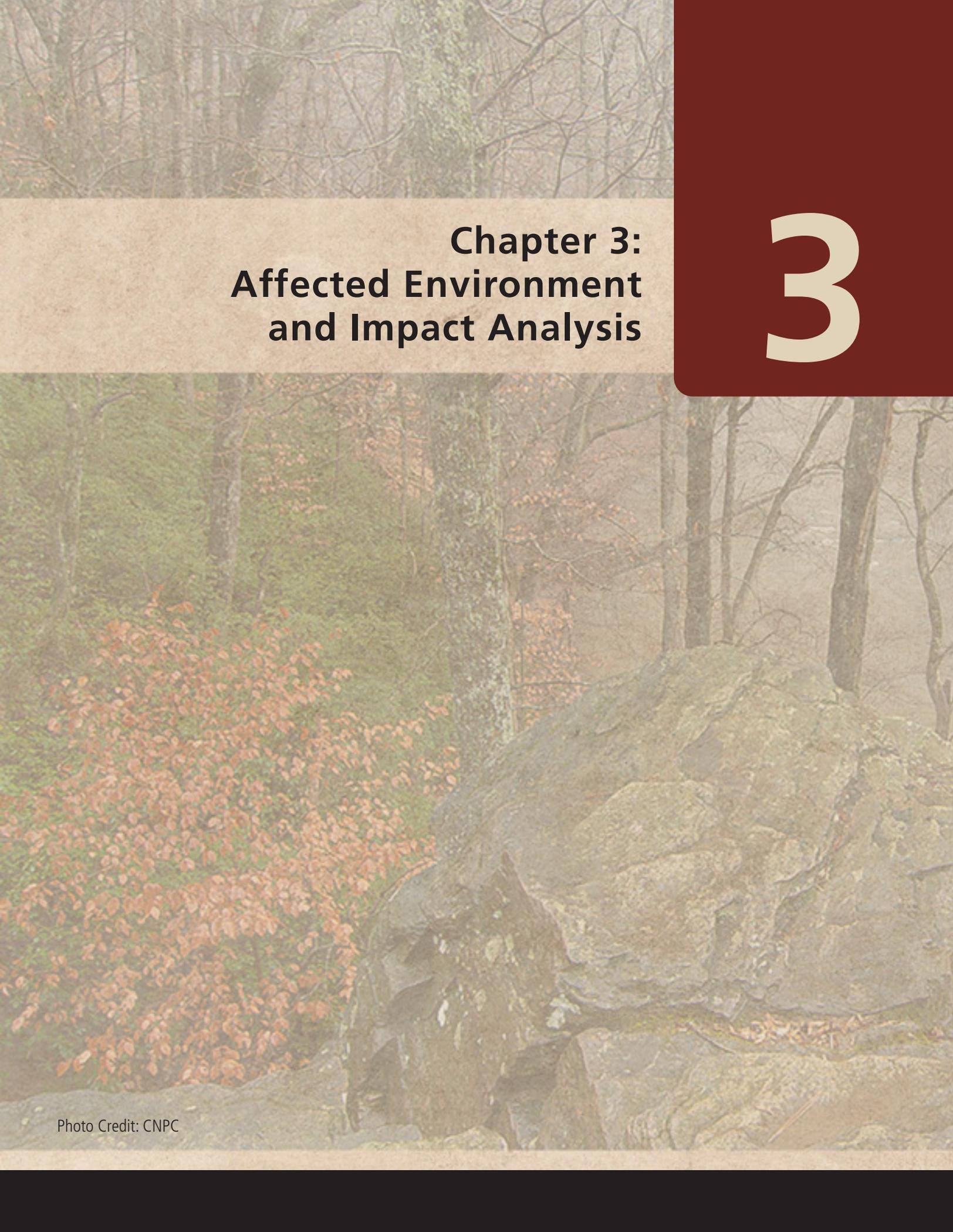
used for budgetary purposes or implementation funding requests. When the actions in the comprehensive trails plan are implemented, actual costs would likely vary from what is presented below.

Table 6. Estimated Costs and Full-Time Employees (FTE) for 20 Years

FTE/Costs	Alternative 1 (No Action)	Alternative 2 (Preferred)
Chattahoochee River NRA Full-Time Employees		
Current park FTE	32	32
Additional FTE (maintenance staff—trails crew and lead)	0	2
Total FTE	32	34
Annual Operating Costs		
Current ONPS*	\$3,640,000	\$3,640,000
Additional maintenance cost**	0	\$236,184
Total Annual Cost ONPS	\$3,640,000	\$3,876,184
One-Time Costs		
Trail construction, including boardwalks	\$484,000	\$8,335,536
Trail restoration	0	\$1,318,680
Total one-time costs	\$484,000	\$9,654,216

* Operation of the National Park System

** Including new full-time employees, 20-year annualized average



Chapter 3: Affected Environment and Impact Analysis

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Chapter 3: Affected Environment and Impact Analysis

Introduction

This chapter describes the resources that could be affected as well as the potential environmental consequences of implementing one of the alternatives being considered.

The topics presented are those related to the key issues that could inform the NPS decision about how to manage the park's trail system. The descriptions of the resources provided in this chapter serve as baseline conditions against which the potential effects of the proposed actions can be compared. Included in this analysis are vegetation, wildlife, soils, wetlands, visitor use and experience, and archeological resources.

Vegetation

Affected Environment (Current and Expected Future Conditions of Resources)

The native plant communities found in Chattahoochee River National Recreation Area are diverse and relatively intact. The park contains the oldest and most extensive protected areas of native vegetation in the Atlanta metropolitan area (NPS 2009). In total, more than 982 plant species are present in the park, including algae, bryophytes (mosses), ferns, gymnosperms (pines and cedars), monocots (e.g., sedges, rushes, grasses, orchids), and dicots (e.g., willows, maples, oaks, hollies, asters) (NPS 2004). Of these 982 species, 813 plant species are native to the area (NPS 2015b). Ranging from roughly 750 feet to 1,180 feet in elevation, the vegetation communities in the park vary with topography and proximity to the river. The landscape and vegetation in the park are a mixture of fields, natural stands of second growth trees, some near-original stands of forest, and planted trees (NPS 2009). The near-original stands of forest are common around cliffs and bluffs in areas that were historically too steep for logging (NPS 2009). Common species found in the project area include multiple varieties of greenbrier (*Smilax spp.*), American beech (*Fagus grandifolia*), Chinese privet (*Ligustrum sinense*), loblolly pine (*Pinus taeda*), red maple (*Acer rubrum*), azalea (*Rhododendron canescens*), and various oak species (*Quercus spp.*).

Primary threats to vegetation include invasive nonnative plant infestations and visitor-created social trails. Invasive plant infestations often occur on disturbed ground from visitor use, facility development, and nearby residential development (NPS 2017). Currently, established infestations include nonnative plants such as Chinese privet, English ivy, kudzu, Japanese honeysuckle, Japanese stiltgrass, mimosa, princess tree, and periwinkle (NPS 2017). Visitor-created social trails disturb native vegetation through trampling and can increase soil erosion especially in steeper areas (NPS 2017). Visitor-created trails have proliferated as hikers venture “off trail” to explore, take photographs, and/or engage in other off-trail activities. Vegetation trampling due to visitor-created social trails causes reductions in vegetation

cover, height, and biomass, changes in species composition, and introduction and spread of nonnative plants along linear trail corridors (Marion 2016).

Additional threats to vegetation include ongoing and increasing development, climate change, and trail widening (NPS 2017). Development contributes to further visitor-created trails from adjoining residential areas and increases runoff of pollutants into the park. Climate change has led to and will continue to lead to changes in species migration, phenology (timing), soil carbon sequestration, seasonal tree canopy cover, acidification, ground-level ozone, and forest successional age changes (loss of old trees) (NPS 2017). Trail widening occurs in spot-locations as trail users avoid rutted, rocky, flooded, or muddy areas on trails, trampling adjacent vegetation. Lastly, chestnut blight and pine beetle have affected native trees (NPS 2000). Biking is currently allowed on 11.6 miles of trails throughout the park. Existing trails that allow biking are more prone to short-term impacts along trail edges when bikers occasionally travel off trail into vegetated areas. Past development includes several road- and bridge-widening projects and utility line expansion and maintenance projects that have impacted many acres of the park. As the Atlanta area continues to grow, future trail development, road widening and bridge expansions are proposed, as well as new utility lines and expansion of existing utility lines in the park, including electric, gas, petroleum product, sewer, and water projects. These past and future development projects will continue to adversely impact vegetation. Mitigation measures will be implemented to reduce adverse impacts to vegetation; however, these projects will contribute long-term adverse effects to the overall adverse trends in vegetation at the park.

Potential impacts to vegetation would be mitigated by implementing the park’s 2013 resource stewardship strategy and by adhering to the mitigation measures outlined in chapter 2.

Impacts on Vegetation

ALTERNATIVE 1: NO ACTION (CONTINUE CURRENT MANAGEMENT)

Under the no-action alternative, impacts on vegetation would remain the same, as described in the affected environment section. The current resource threats of invasive plant species, visitor-created trails, development, climate change, and trail widening would continue to occur.

ALTERNATIVE 2: NPS PREFERRED ALTERNATIVE

Under the action alternative, newly constructed trails and adopted social trails would result in the permanent removal of up to 69 acres of vegetation. The summation of newly constructed trails includes the potential greenway trail segments. The total acreage accounts for the width of the trails and the necessary horizontal clearance of vegetation thinning and trimming needed to construct the trails, as outlined in appendix F. Trail widths and horizontal clearance are based on their trail type, as outlined in appendix F.

Impacts to vegetation are subdivided by vegetation type in table 7 below. Most acres of impact fall within forest vegetation, at 66 acres. Acres of impact to marsh, shrub grass, and other vegetation types account for 0.5 acres, 1.9 acres, and 0.9 acres, respectively. When the acres of impact of the action alternative are compared to the total acreage of that vegetation type in the park, there is less than a 2% impact to each vegetation type (table 7). In total, the action alternative proposed in this trails management plan equates to approximately 1.5% impact to vegetation.

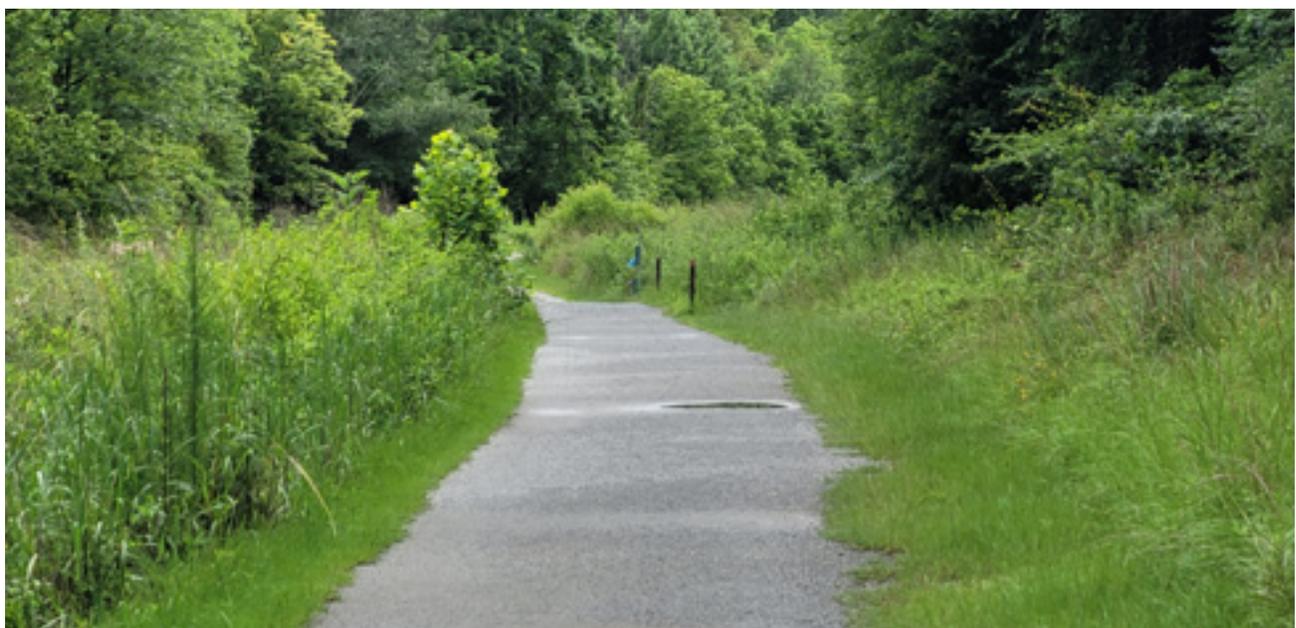
Table 7. New Construction Impacts to Vegetation, by Vegetation Type

Vegetation	Acres of Impact	Total Acreage in Park	Percentage of Impact
Forest	66 acres	4345	1.5%
Marsh	0.5 acres	59	0.9%
Shrub grass	1.9 acres	205	0.9%
Other	0.9 acres	92	1.0%
Total	69 acres	4701	1.5%

With construction of new trails, trail braiding and widening would continue to occur in spot-locations as trail users avoid rutted, rocky, flooded, or muddy areas on trails and trample adjacent vegetation. However, park staff would continue to periodically monitor trail conditions and social trails, as outlined in appendix D. Per mitigation measures described in chapter 2, trail clearing and the resulting removal of vegetation would be made as narrow as possible. Clearing vegetation for any new trail would be coordinated with the park staff and consist of disciplines in or equivalent to planning and design, plant ecology, biology and trail construction and maintenance during field verification. In addition, healthy trees of any size would not be removed except where they interfere with trail traffic and/or the trail cannot be relocated to eliminate the interference. All healthy trees over 12 inches diameter breast height would remain. Branches extending over the trail corridor would be cut no higher than 10 feet above the trail surface. Where natural plant restoration is not able to occur from soil disturbance, park staff would revegetate with native plants where necessary to minimize impacts of construction. For protection against erosion and to maintain resource integrity, native vegetation should be retained as much as possible. Rare plant species and large tracts of forest area would also be protected.

Proposed construction activities that disturb vegetation could lead to increasing populations of nonnative invasive plants by removing established native plants that compete with noxious weeds, exposing mineral soil as a substrate for weed germination and dispersing existing or new weed seeds or plants carried by construction equipment and trail users. To prevent the spread of invasive and nonnative vegetation, the National Park Service would manage weed infestations in accordance with the park's invasive vegetation management plan (NPS 2017) and other mitigation measures discussed in chapter 2.

Restoring official trails due to alignment and sustainability issues would result in a positive impact to 6.4 acres of vegetation. These areas would be positively impacted by the reduction of soil compaction, vegetation trampling, and introduction of invasive plant species. The suite of management strategies included in the trail condition, social trail, and unauthorized parking indicators in appendix D would generally have beneficial effects on vegetation because efforts to minimize trail widening, reduce social trailing, reduce roadside parking, and ensure the presence of cross-slope on trails would result in less vegetation trampling and soil compaction.



Under the action alternative, biking would be allowed on a total of 21.9 miles of trails, an increase of 10.3 miles when compared to the no-action alternative. The increase of multiuse trails allowing biking is not anticipated to impact vegetation more than the impact of constructing the new trails alone. Effects to vegetation from hiking and traditional biking are similar (Marion et al. 2017). Therefore, no distinguishable impact on vegetation from increased mileage of traditional biking is anticipated. While the weight and speed of e-bikes is not anticipated to impact vegetation more than traditional bikes, there have been rare reports of wildfire due to e-bike batteries igniting (Dawson 2019). The risk of wildfire associated with the use of e-bikes at the park is minimal due to the humidity of the region and would be mitigated by requiring e-bikes to be in compliance with park regulations, resulting in a low-probability minimal impact.

In total, when accounting for the acreage of restored trails, the action alternative would result in adverse impacts to approximately 62.6 acres of vegetation. Mitigation measures and best management practices listed in chapter 2 would be implemented to reduce adverse impacts to vegetation from these actions. The impacts would be even less noticeable parkwide, since at least 4,638 acres of vegetation would be unaffected. Therefore, the actions proposed under the action alternative would not be expected to impact the long-term viability of vegetation in the park.

CONCLUSION

Under the no-action alternative, impacts on vegetation would remain the same as described in the affected environment section. Actions proposed under the action alternative would result in the removal of up to 62.6 acres of vegetation, a moderate impact. Construction of the new trails would have minor short-term impacts during construction and minor long-term impacts on the vegetation within the project area. The restoration of existing trails would have long-term positive impacts on vegetation. Overall, the removal of vegetation would account for the small percentage of up to 1.3% total impact

to vegetation within the project area. With the implementation of mitigation measures outlined in chapter 2 and trail construction guidelines in appendix F, the effects to vegetation would be minor because areas would be surveyed prior to ground disturbance to ensure that final trail alignment avoids areas with high-quality vegetation, highly diverse vegetation, and healthy trees.

Wildlife—Birds, Denning Mammals, Herptiles

Affected Environment (Current and Expected Future Conditions of Resources)



A wide variety of birds, denning mammals, and herptiles are known to occur at Chattahoochee River National Recreation Area. This wildlife is supported by a diversity of terrestrial habitat types, including fields, ravines, floodplains, hills, and cliffs (NPS 2009). As the park connects the Piedmont and Appalachian Mountain physiographic provinces, it serves as an important migratory route and a means of range extension for many wildlife species (NPS 2009). The interaction of the river with the associated floodplains and terrestrial habitats combine to make a linear corridor of habitats with high ecological value (NPS 2009). Wildlife diversity

is greatest in the mesic bluff and bottomland habitats, and the oak-hickory climax forest is the most widespread terrestrial habitat type in the park (Wharton 1978).

As many as 198 bird species, including neotropical migrant songbirds, raptors, waterfowl, and shorebirds, are known to occur in diverse wetland and upland habitats in the park (NPS 2021). The park is a rest and feeding stop along the flyways of important migratory bird species (NPS 2017). Birds at Chattahoochee River NRA thrive in weedy fields, brush, early successional vegetation, upland forest, bottomland forest, and swamps. Birds can be sensitive to changes in the size of their habitat, depending on the species. For example, some sensitive forest birds need a minimum of 200 acres of continuous forest for suitable breeding habitat, whereas less sensitive forest birds can find value in a forested area less than one acre in size (Treyger 2019). Observational and bird survey data in the park derives from a variety of organizations, including primarily the Inventory & Monitoring Program Southeast Coast Network, Georgia Audubon Society, the US Fish and Wildlife Service, the Georgia Department of Natural Resources, as well as local birding enthusiasts and park resources staff (NPS 2009).

Among the many denning mammals at Chattahoochee River NRA, the four most common are foxes, beavers, racoons, and coyotes. Both the common gray fox (*Urocyon cinereoargenteus*) and red fox (*Vulpes vulpes*) have been reported in the park (NPS 2021). Foxes can typically be found in hardwood forests throughout the park (NPS 2017). A nocturnal species, beavers are commonly active along riverbanks and in wetland habitats throughout the park in the evenings (NPS 2017; NPS 2009). Raccoons are also nocturnal and tend to den in hardwood forests (NPS 2017). Coyotes have been observed in the park and often form multiple dens and move between dens seasonally for safer conditions (NPS 2021; Holzman et al. 1992). While some denning mammals can be sensitive to changes in their habitat, others can respond to

these changes in an opportunistic way. Denning mammals fit within the larger landscape of as many as 41 mammal species known to occur in the park (NPS 2021). Common mammals include deer, opossums, bats, squirrels, eastern cottontail rabbits, short-tailed shrew, pine vole, deer mouse, and chipmunk (NPS 2009). Inventories of mammals derive from the National Park Service Southeast Coast Inventory & Monitoring Program and the US Forest Service, supported by the University of North Carolina at Wilmington and Clemson University, respectfully.



As many as 78 herptile species (47 reptiles and 31 amphibians) are known to occur in the park (NPS 2021). Common herptile species include snakes, lizards, turtles, frogs, toads, newts, and salamanders. Herptiles are often found in the Chattahoochee River and its tributaries, springs, seeps, and other terrestrial/water interfaces, such as wetlands, backwater pools, sloughs, and the mouths of tributary streams where they enter the mainstem of the river (NPS 2000). During the day, amphibians often take refuge in rotten logs and stumps or under leaf litter and rocks, and turtles often sun on rocks or logs while snakes often hide in leaf litter (Chattahoochee Nature Center 2021; NPS 2021). Riparian habitats typically occur in a linear configuration within watersheds and are often traversed by roads and

trails (Gaines et al. 2003). Wildlife associated with riparian habitats can be vulnerable to the effects of recreational activities on their habitats because of the concentration of these activities in riparian areas (Gaines et al. 2003). Heavy recreational use on trails near water edges, leading to more bare ground, has been related to a decline in anuran species (Cushman 2006).

The primary threat to wildlife is fragmented habitat. Habitat is fragmented at Chattahoochee River NRA due to development, encroachments, loss of quality habitat in the surrounding watershed, and population shifting to avoid growing interactions with humans (NPS 2017). The three components of habitat fragmentation are the loss of the original habitat, reduction in habitat patch size, and increasing isolation of habitat patches, all of which reduce biodiversity in an area (Andr n 1994). Existing trails fragment habitats through openings in tree canopy and alterations to vegetation along the trail. Habitat fragmented by trails can experience microclimatic changes such as increased sunlight, increased rainfall due to reduced canopy, increased wind, decreased humidity, and altered temperature (Jordan 2000). In addition, habitat fragmented by trails can experience changes to predation patterns (NPS 2012). As the Atlanta metropolitan region continues to grow, the park will become increasingly important as a refuge for native wildlife in relatively intact habitat corridors (NPS 2009). In a comparison with 15 other southeastern national parks, Chattahoochee River NRA was the second highest in number of native herptile species, likely related to the park’s backwater and floodplain pools in the park, as well as areas of confluence of the river with its tributaries (Burkholder et al. 2010). Current conditions of wildlife habitat health are summarized in table 8 below. As shown, there are currently 15 blocks summing to 1,267 acres and accounting for 72% of total habitat that classify as “very good habitat”; 40 blocks summing to 281 acres and accounting for 16% of total habitat that classify as “good habitat”; 7 blocks summing to 106 acres and accounting for 6% of total habitat that classify

as “fair habitat”; and 40 blocks summing to 105 acres and accounting for 6% of total habitat that classify as “poor habitat.” Habitat health was quantified by assessing fragmentation of forested blocks using spatial analysis. Forested blocks were selected as a reference because most wildlife species at Chattahoochee River NRA inhabit forested areas. Fragmentation is defined as forested blocks that are subdivided by either existing trails and/or roads, where a 100-meter buffer was used on each side of trails and roads. Using a 100-meter buffer is a cautious approach for habitat fragmentation analysis, especially for an urban park, and is based on various research supporting a 100-meter buffer for meaningful analysis (Miller et al. 1998; Colorado Trails with Wildlife in Mind Taskforce 2021; Gaines et al. 2003). For the purposes of this analysis, blocks were grouped into the following categories: 1–5 acres, 5–10 acres, 10–20 acres, and >20 acres, representing “poor,” “fair,” “good,” and “very good” forest habitat block sizes, respectively.

Table 8. Current Conditions of Habitat Health

Habitat	Very Good Habitat	Good Habitat	Fair Habitat	Poor Habitat
Number of blocks	15	40	7	40
Acres	1,267	281	106	105
Percent of total habitat	72%	16%	6%	6%

Additional threats to wildlife include fragmentation of wetlands, bike use, and disease. Wildlife habitat is currently fragmented by approximately 10 miles of trail falling within 25 feet of wetlands. As a result of this fragmentation, wildlife associated with wetlands near trails may experience occasional disturbances from visitors using the trails. In addition, allowing biking on 11.6 miles of trails and roads contributes to wildlife disturbance, as bike use is generally faster and louder than pedestrian use and can therefore be more disruptive to wildlife. Lastly, Chytridiomycete fungus was recently identified at the park, which warrants concern

because of its correlation with amphibian disease and population declines (NPS 2009). Chytridiomycete fungus has the potential to continue to spread via pedestrian foot traffic and on bike tires on trails. Biking is currently allowed on 11.6 miles of trails throughout the park. While biking may cause more disturbance to wildlife than hiking, the difference in disturbance is minimal (Wisdom 2004). Effects to wildlife are similar between hikers and bikers, and the impacts on wildlife due to e-bikes is similar to the effect on wildlife due to traditional bikes (Marion et al. 2017; Nielsen et al. 2019). Past development includes several road- and bridge-widening projects and utility line expansion and maintenance projects that have impacted many acres of the park. As the Atlanta area continues to grow, future trail development, road widening and bridge expansions are proposed, as well as new utility lines and expansion of existing utility lines in the park including electric, gas, petroleum product, sewer, and water projects. These past and future development projects will continue to adversely impact wildlife and their habitat. Mitigation measures will be implemented to reduce adverse impacts to wildlife; however, these projects will contribute to long-term adverse effects to the overall adverse trends in wildlife habitat fragmentation at the park.

Potential impacts to wildlife would be mitigated by implementing the park’s 2013 resource stewardship strategy and by adhering to the mitigation measures outlined in chapter 2.

Impacts on Wildlife

ALTERNATIVE 1: NO ACTION (CONTINUE CURRENT MANAGEMENT)

Under the no-action alternative, impacts on wildlife would remain the same as described in the affected environment section. The current primary threat of habitat fragmentation would continue to occur.

ALTERNATIVE 2: NPS PREFERRED ALTERNATIVE

Under the action alternative, forest fragmentation health would be affected as summarized in table 9 below. As shown, there would be 14 blocks summing to 742 acres and accounting for 61% of total habitat that classify as “very good habitat”; 37 blocks summing to 278 acres and accounting for 23% of total habitat that classify as “good habitat”; 5 blocks summing to 90 acres and accounting for 7% of total habitat that classify as “fair habitat”; and 38 blocks summing to 105 acres and accounting for 9% of total habitat that classify as “poor habitat” (table 9). Fragmentation is defined as forested blocks that are subdivided by either existing trails and/or roads, where a 100-meter buffer was used on each side of trails and roads. For the purposes of this analysis, blocks were grouped into the following categories: 1–5 acres, 5–10 acres, 10–20 acres, and >20 acres, representing “poor,” “fair,” “good,” and “very good” forest habitat block sizes, respectively.

Table 9. Action Alternative Conditions of Habitat Health

Habitat	Very Good Habitat	Good Habitat	Fair Habitat	Poor Habitat
Number of blocks	14	37	5	38
Acres	742	278	90	105
Percent of total habitat	61%	23%	7%	9%

As a result of the action alternative, current habitat classified as “very good habitat” would be reduced by 1 block (525 acres), “good habitat” would decrease by 3 blocks (3 acres), “fair habitat” would decrease by 2 blocks (16 acres), and “poor habitat” would decrease by 2 blocks (same number of acres). The net effect is additional fragmentation into “good,” “fair,” and “poor” quality habitats as evidenced by changes in the percent of total habitat.

With the increase of 32.4 total miles in the action alternative (including adopted social trails and accounting for restored trails), wildlife may be more likely to be displaced or simply avoid these areas (Gaines et al. 2003). In addition, increased trail mileage could result in increased social trails and resulting increased habitat fragmentation. However, the effects of habitat fragmentation are much less intense for the development of nonmotorized trails than that of motorized/paved roads (Gaines et al. 2003; Snetsinger and White 2009). Current data on existing social trails is limited. As a part of the action alternative, these social trails would be restored to natural conditions. The restoration of existing social trails is not captured in the analysis of habitat health due to the limitation of data. Wildlife species in this park are accustomed to being within an urban metropolitan landscape and are expected to maintain this resiliency under the action alternative. These changes in increased habitat fragmentation will affect birds, mammals, and herptiles uniquely.



A recent study of Georgia Piedmont wintering birds showed that a significant habitat preference was detected in only 25% of species, indicating a resilience of Chattahoochee River NRA birds to adapt to changes to their habitat (White et al. 1996). Anticipated potential impacts to birds as a result of increased trail network habitat

fragmentation include displacement, avoidance, and effects from human disturbance, such as disruption of feeding patterns and parental attentiveness, which may increase the risk of nest predation (Gaines et al. 2003; Snetsinger and White 2009). Lastly, increased edge openings in the forest canopy due to increased fragmentation can both increase the chance of predation on bird nests (Wilcove 1985) and create opportunity for structurally complex habitat through canopy gaps (Treyger 2019). Canopy gaps support bird habitat through increased vertical structural diversity and allow light to filter through vegetation to stimulate herbaceous development and stimulate understory regeneration (Treyger 2019). Overall, the negative impacts to birds from increased habitat fragmentation would be minor, as the positive effect of increased canopy gaps outweighs the negative impacts of habitat fragmentation.

Anticipated potential impacts to denning mammals due to increased trail network habitat fragmentation include displacement of dens and avoidance. Of the four most common denning mammals at the park, foxes are the most sensitive to changes such as trail alterations and the introduction of visitors near dens. Disturbances to habitat because of trail development could increase the rate of fox predation and the increase of anthropogenic foods near fox habitat may impact fox populations as well (Hradsky et al. 2017). While beavers are impacted by habitat loss and conflict with humans, minimal impacts to their habitat would likely occur as a result of the proposed land-based trail system. An increase in habitat fragmentation would likely result in minimal impacts to both raccoons and coyotes, as these species can exhibit opportunistic characteristics (NPS 2009). For example, coyotes can rapidly acclimate to a variety of habitats and are versed at handling habitat alterations (GADNR 2017). Overall, the negative impacts to denning mammals from increased habitat fragmentation would be minor due to the ongoing mitigation efforts to avoid disturbances to wildlife habitat during trail implementation and educating visitors about Leave No Trace

principles, as outlined in chapter 2. Anticipated potential impacts to herptiles as a result of increased trail network fragmentation include reduced patch size, increased patch isolation, and increased risk of extinction (Cushman 2006). While trails near wetlands can alter drainage patterns and negatively impact wildlife habitat, the use of helical piers (see the wetlands analysis below) would reduce this impact to herptiles (Snetsinger and White 2009). While amphibians are greatly impacted by new roads (via vehicular collisions), amphibians are less impacted by new trails (Gaines et al. 2003). Amphibians often cross trails to reach water for breeding and are expected to continue crossing new trails after construction, with no change to success of reaching water. Toads are minimally affected by trail development and presence and are expected to be minimally affected by the increased trail network fragmentation (Snetsinger and White 2009). Reptiles can be affected by the size of their habitat but are more affected by the quality of their habitat (Mac Nally and Brown 2001). The negative impacts to both reptiles and amphibians would be reduced through the ongoing monitoring of trail condition and social trailing, as outlined in appendix D. Overall, the negative impacts to herptiles from increased habitat fragmentation would be minor due to ongoing mitigation efforts to maintain high-quality habitat and monitoring protocols, as outlined in chapter 2 and appendix D. High-quality habitat would continue to exist throughout the park to support herptiles outside of the project area.

In the short term, construction noise and activity may alter wildlife use of the area if animals avoid the disturbed area. Noise from construction and maintenance activities may adversely impact wildlife through impeding wildlife communication, courtship and mating, predation and predator avoidance, and effective use of habitat (Shannon et al. 2016). Following construction, animals may return to the area, depending on the level and frequency of human use of the new facilities.

Adverse impacts to approximately 69 acres of vegetation would reduce habitat available for

species reliant on this type of environment. However, this only account for 1.5% reduction of this habitat when compared to the total habitat available at the park. Additionally, wildlife would be subject to long-term intermittent disturbance associated with increased human presence and activities in the park, including a possible increase in human presence in areas that were previously less used and at times closer to dawn and dusk.

In terms of development, the areas proposed for improved or increased parking areas are largely in open, disturbed areas of the park. In the units identified in chapter 2 that have potential changes to parking, the removal of vegetation or creation of new disturbance in forested areas may result in disturbance to wildlife. Since all these parking areas would be located on the edge of forest blocks in previously disturbed areas of the park, the impact to wildlife is anticipated to be negligible to minor.

In addition, under the action alternative, wildlife habitat would be fragmented by approximately 11.7 miles of trail falling within 25 feet of wetlands. As a result of this increase of 1.7 miles when compared to the no-action alternative, wildlife associated with wetlands near trails may experience increased disturbances from visitors using the trails.

Under the action alternative, biking would be allowed on a total of 21.9 miles of trails, an increase of 10.3 miles when compared to the no-action alternative. The increase of multiuse trails allowing biking may contribute to increased disturbance to wildlife, although this disturbance is not anticipated to be greater than the disturbance to wildlife caused by hikers (Marion et al. 2017).

The restoration of 19.6 miles of trails to natural conditions would limit formal access in largely forest areas that would provide beneficial impacts on wildlife by reducing fragmentation and wildlife disturbance in localized areas of the park. Best practices for trail restoration to ensure that restoration of native vegetation and wildlife habitat is successful are listed in appendix F.

Overall, when accounting for habitat fragmentation, temporary impacts due to construction, and trail restoration, wildlife and their habitat would experience long-term minor adverse impacts. Per the mitigation measures described in chapter 2, maintaining high-quality habitat, conducting plant and wildlife surveys before construction, conducting trail work outside of wildlife nesting and breeding season, and restoring trails to a high-quality habitat would all reduce the adverse impacts to wildlife.

CONCLUSION

Under the no-action alternative, impacts on wildlife would remain the same as described in the affected environment. Actions proposed under the action alternative would result in an increase of trail network habitat fragmentation, resulting in negligible to minor impacts to birds, denning mammals, and herptiles due to the resiliency of these species adapting to changes in their habitat. Construction of the new trails and restoration of existing trails would have minor short-term impacts during construction and minor long-term impacts on wildlife within the project area. Employing the mitigation measures outlined in chapter 2 would further reduce the overall minor impacts to wildlife.

Soils

Affected Environment (Current and Expected Future Conditions of Resources)

Soils at Chattahoochee River National Recreation Area are generally loamy, with soils in areas adjacent to creeks being sandier, and soils in areas farther from water bodies are mixed with rocks, boulders, and stones (NPS 2019). Ranging from roughly 750 feet to 1,180 feet in elevation, most trails have hilly topography and sit between 800 feet and 900 feet in elevation. Upland soils are located on steep slopes and are highly erodable, shallow, and rocky and belong principally to the Madison-Louisa-Pacolet and the Wickham-Altavista-Red Bay associations (NPS 2009). Bottomland soils are highly erodable, and uncontrolled exposure of these soils often results in attendant sediment and siltation in the Chattahoochee River.



The bottomland soils belong primarily to the Congaree-Chewacla-Wehadkee and the Cartecay-Toccoa associations (NPS 2009). The park has a number of soil types classified as prime farmlands, which have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops (NPS 2009). Biking is currently allowed on 11.6 miles of trails throughout the park. Existing trails that allow biking are more prone to soil erosion, predominately due to unsustainable trail alignment and visitors biking during or shortly after precipitation events, when the soils are more malleable and vulnerable to structural changes. Current conditions of soil sustainability are described in table 10. As shown, approximately 38 miles of existing trails are sustainable (at 57% of total trails), and 29 miles of existing trails are unsustainable (at 43% of total trails). Sustainable trails are defined as trails that pass the “half-rule” test, in which the average trail slope divided by the average slide slope is less than or equal to 0.5 (IMBA 2004). Unsustainable trails are defined as trails where the average trail slope divided by the average side slope is greater than 0.5. The slope of the topography is directly correlated with the potential for runoff and soil erosion (Duley and Kelly 1939).

Table 10. Current Conditions of Soil Sustainability

Soil	Sustainable	Unsustainable	Total
Miles	38 miles	29 miles	67 miles
Percent of total trail mileage	57%	43%	100%

Primary threats to soils include erosion, compaction, visitor-created trails, and ongoing and increasing development (NPS 2009). Soil erosion is compounded with increased visitor use on unsustainable trail alignment where trails follow steep slopes. Visitor-created social trails also reduce vegetative cover and, in effect, reduce soil stability and increase soil erosion and compaction (NPS 2017). Soil erosion due to visitor-created trails is especially evident in steeper areas. Visitor-created trails have proliferated as hikers venture “off-trail” to explore, take photographs, and/or engage in other off-trail activities. Trail braiding and widening often occur in spot-locations as trail users avoid wet, muddy, rutted, or rocky areas on trails, compacting and eroding soils next to trails. Soil erosion near waterbodies results in further adverse impacts on aquatic life and water quality (NPS 2009). Development contributes to the creation of visitor-created trails from adjoining residential areas and increases runoff of pollutants into the park which can affect the soil chemistry (NPS 2009).

Past development includes several road- and bridge-widening projects and utility line expansion and maintenance projects that have impacted many acres of the park. As the Atlanta area continues to grow, future trail development, road widening, and bridge expansions are proposed, as well as new utility lines and the expansion of existing utility lines in the park, including electric, gas, petroleum product, sewer, and water projects. These past and future development projects will continue to adversely impact soils through construction and soil compaction, damaging soil ecosystems and affecting nutrient cycling processes. Mitigation measures will be implemented to reduce adverse

impacts to soils; however, these projects will contribute long-term adverse effects to the overall adverse trends in soils at the park.



Potential impacts to soils would be mitigated by implementing the park’s resource stewardship strategy and by adhering to the mitigation measures outlined in chapter 2.

Impacts on Soils

ALTERNATIVE 1: NO ACTION (CONTINUE CURRENT MANAGEMENT)

Under the no-action alternative, impacts on soils would remain the same as described in the affected environment section. The current resource threats of erosion, compaction, visitor-created trails, and development would continue to occur.

ALTERNATIVE 2: NPS PREFERRED ALTERNATIVE

There would be little to no impact to the topography of the land along new trails since the new trail system would follow the existing topography of the land. Topography of new trails would be more sustainably aligned, and soil erosion would therefore be less on new trails than on existing trails. Adverse impacts of soil erosion due to new trail construction would be lessened due to the topographic alignment of the new trails.

Table 11 shows the action alternative conditions of soil sustainability. As shown, approximately

57.4 miles of the resultant trails are sustainable (at 64% of total trails), and 32.8 miles of resultant trails are unsustainable (at 36% of total trails). Sustainable trails are defined as trails that pass the “half-rule” test, where the average trail slope divided by the average slide slope is less than or equal to 0.5 (IMBA 2004). Unsustainable trails are defined as trails where the average trail slope divided by the average side slope is greater than 0.5.

Table 11. Action Alternative Conditions of Soil Sustainability

Soil	Sustainable	Unsustainable	Total
Miles	57.4 miles	32.8 miles	90.2 miles*
Percent of total trail mileage	64%	36%	100%

* This total does not include the existing paved trails.

Under the action alternative, newly constructed trails and adopted social trails would result in the permanent impacts of up to 69 acres of soil. The summation of newly constructed trails includes the potential greenway trail segments. The total acreage accounts for the width of the trails, and the necessary horizontal clearance of vegetation thinning and trimming needed to construct the trails, as outlined in appendix F. Trail widths and horizontal clearance are based on their trail type, also outlined in appendix F.

Restoring official trails due to alignment and sustainability issues would result in a positive effect on 6.4 acres on soil. Compacted and barren soils would be loosened with restoration activities and plantings allowing for natural processes to return to these areas. The suite of management strategies included in the trail condition, social trail, and unauthorized parking indicators in appendix D would generally have beneficial effects on soils because efforts to minimize trail widening, reduce social trailing, reduce roadside parking, and ensure the presence of cross-slope on trails would result in less soil compaction and erosion.

Initial trail construction would cause soil compaction and loss through erosion. In some areas, up to 6 to 8 inches of topsoil would be removed to create trail benches; this soil would be cast downhill from the trail. Increased soil disturbance from construction could contribute to increased adverse impacts on aquatic life and water quality and may contribute to the spread of invasive species. Implementation of mitigation measures listed in chapter 2 would reduce impacts from trail construction. Recreational use of the trails would likely cause continued adverse soil impacts, including loss of organic litter and soil compaction, rutting, and erosion. Trail widening or braiding or development of visitor-created trails may result in soil compaction and erosion on either side of new trails. However, park staff would continue to periodically monitor trail condition and social trails, as outlined in appendix D.

With construction of new trails and facilities, there is the potential for informal spur trails to develop as visitors travel off maintained trails to reach a destination. These “visitor-created trails” are of concern to land managers when they become areas of soil erosion and compaction. However, use of management strategies and mitigation measures listed in chapter 2, such as improving signage, rehabilitating trails, and establishing trail borders, would reduce off-trail travel and lessen adverse impacts from hiking on the trail corridors and adjacent areas.

Under the action alternative, biking would be allowed on a total of 21.9 miles of trails, an increase of 10.3 miles when compared to the no-action alternative. The increase of multiuse trails allowing biking may contribute to increased soil erosion. The amount and severity of anticipated soil erosion due to class 1 e-bikes is similar to that of traditional bikes (International Mountain Bicycling Association 2015; Nielsen et al. 2019). Implementing design standards outlined in appendix F for multiuse trails would mitigate the risks of increased soil erosion due to biking. Relevant design standards include appropriate grading, banking, trail alignment, assessing soil suitability, and temporarily closing trails after

precipitation events. Per the design standards described in appendix F, soil suitability, minimization of user-caused soil displacement, infrastructure, and clear sight lines on multiuse trails would all reduce the adverse impacts to soils on newly constructed trails. In addition, the mitigation measures described in chapter 2, such as utilizing USDA NRCS soil survey data and conducting site evaluations, would reduce the adverse impacts to soils on newly constructed trails.

In total, when accounting for the acreage of restored trails, the action alternative would result in adverse impacts to approximately 62.6 acres of soils. Mitigation measures and best management practices listed in chapter 2 would be implemented to reduce adverse impacts to soils from these actions. The impacts would be even less noticeable parkwide since at least 4,638 acres of soils would be unaffected. Therefore, the actions proposed under the action alternative would not be expected to impact the long-term viability of soils in the park.

CONCLUSION

Under the no-action alternative, impacts on soils would remain the same as described in the affected environment section. Actions proposed under the action alternative would result in adverse impacts to up to 62.6 acres of undisturbed soils. Construction of the new trails would have minor short-term impacts during construction and minor long-term impacts on the soils within the project area. The restoration of existing trails would have long-term positive impacts on soils. Overall, the disturbances to soils would account for the small percentage of up to 1.3% total impact to soil within the project area. The action alternative would result in a 7% increase of sustainable trails and a reduction of 7% of unsustainable trails overall. With the implementation of mitigation measures outlined in chapter 2 and trail construction guidelines in appendix F, the impacts to soils would be minor because topsoils would be salvaged, soils would be stabilized during and after construction, and soil conditions would be considered when determining the final layout of a trail.

Wetlands

Affected Environment (Current and Expected Future Conditions of Resources)

Wetlands at Chattahoochee River National Recreation Area are located along the Chattahoochee River floodplain and at seeps along the lower slopes of the valley walls and along tributaries (NPS 2009). These wetlands serve as natural water purifiers, maintain flow regimes, provide flood control, offer recreational opportunities, and provide important habitat for many fish, wildlife, and plant species (NPS 2009).

Detailed wetland mapping of the proposed project areas was conducted in 2010 (NPS 2010). The National Wetlands Inventory, maintained by the US Fish and Wildlife Service, depicts wetlands throughout the project area. According to this dataset, within the project area, 39 wetland types are present, accounting for approximately 152 acres in total (USFWS 2021). Table 11 shows the six major wetland types by acreage and percent of total wetlands in the park.

Table 12. Summary of Acreages and Percentages of Major Wetland Types

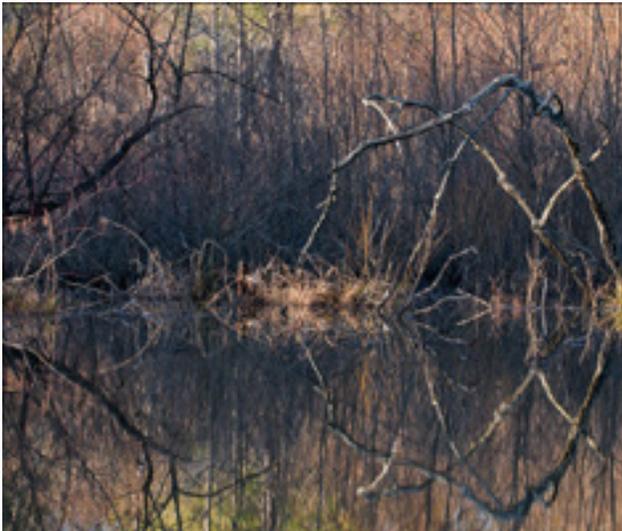
National Wetland Inventory Type	Acres	Percent of Total Wetlands
Palustrine forested	21.5	14.2%
Palustrine scrub/shrub	10.3	6.8%
Palustrine unconsolidated bottom or shore	7.8	5.2%
Palustrine emergent	6.2	4.1%
Lacustrine	33.4	22.0%
Riverine	72.7	47.9%
Total	151.9	100.0%

The six major wetland types, grouped and described below, are expected to be present within the project area:

- **Palustrine wetlands** are inland wetlands that contain ocean-derived salts in concentrations of less than 0.5 parts per thousand and are nontidal. Palustrine forested wetlands

include mature hardwood trees that inhabit the floodplains of the Chattahoochee River, tributary streams, and associated sloughs.

- **Lacustrine wetlands** are nonflowing open water areas partially occupied by wetland vegetation. Lacustrine wetlands (1) are situated in a topographic depression or a dammed river channel; (2) lack trees, shrubs, persistent emergents, emergent mosses, or lichens with greater than 30% areal coverage, and (3) exceed 20 acres for their total area.
- **Riverine systems** include all wetlands and deepwater habitats contained in natural and artificial channels containing periodically or continuously flowing water or which form a connecting link between the two bodies of standing water.



Palustrine forested wetlands occur in floodplain areas at Bowmans Island, Island Ford, and Palisades. Palustrine scrub/shrub wetlands occur at Johnson Ferry South. Lacustrine wetlands occur at the small pond in the Sope Creek area and the beaver pond in Cochran Shoals. Palustrine scrub/shrub, and Palustrine emergent, and Lacustrine wetlands occur throughout the park and are typically associated with a large wetland complex at the southern end of Cochran Shoals.

Prior wetlands studies within the park (NPS 2010) concluded that the actual extent of wetlands is likely larger than that depicted in the US Fish and Wildlife Service National Wetland Inventory maps (USFWS 2021).

The primary threat to wetlands is ongoing and increased development and the resultant adverse impacts to water quality (NPS 2017). The increasingly urbanized landscape surrounding the park results in elevated bacterial contamination, which can fluctuate in severity within the park due to streamflow, season, stormflow, and land use and development patterns (NPS 2017). In addition, wetlands in some areas of the park have been partially drained due to past practices, which reduces the hydrological function of these wetlands (NPS 2009). Biking is currently allowed on 11.6 miles of trails throughout the park. Current trail alignment generally avoids wetland areas for multiuse trails, but bicycles occasionally travel on wetlands. The use of bicycles on wetlands results in soil compaction and degradation of wetland health and functionality.

Past development includes several road- and bridge-widening projects and utility line expansion and maintenance projects that have impacted many acres of the park. As the Atlanta area continues to grow, future trail development, road widening and bridge expansions are proposed, as well as new utility lines and the expansion of existing utility lines in the park including electric, gas, petroleum product, sewer, and water projects. These past and future development projects will continue to adversely impact vegetation. Mitigation measures will be implemented to reduce adverse impacts to wetlands; however, these projects will contribute long-term adverse effects to the overall adverse trends in wetlands at the park.

Potential impacts to wetlands would be mitigated by improving the water quality data available and by adhering to the mitigation measures outlined in chapter 2. Upon final design and if warranted, a formal delineation and any applicable Clean Water Act permitting would occur before groundbreaking.

Impacts on Wetlands

ALTERNATIVE 1: NO ACTION (CONTINUE CURRENT MANAGEMENT)

Under the no-action alternative, impacts on wetlands would remain the same as described in the affected environment section. The current resource threat of ongoing and increased development and the resultant impacts to water quality would continue to occur.

ALTERNATIVE 2: NPS PREFERRED ALTERNATIVE

Under the action alternative, construction of new trails and facilities would primarily occur on well-drained soils. The construction of new trails and facilities would involve additional vegetation clearing and ground disturbance in some areas. Before any construction occurs, a soil investigation would be conducted to confirm soil-bearing capacity and drainage characteristics. If such an investigation reveals soil conditions indicative of wetlands, alternative locations would be assessed. All attempts would be made to avoid or minimize impacts to wetlands. If no alternative non-wetland sites were located, then additional compliance (e.g., a wetlands statement of findings) would be done to assess impacts to wetlands and ensure no net loss of wetland area.

Wetlands would be minimally impacted through the placement of boardwalks with helical piers. The following estimations derive primarily from wetland inventory data from the park (NPS 2010), with the National Wetland Inventory (USFWS 2021) and hydric soil data (SSURGO 2021) in areas where more recent wetland data is unavailable. Estimated areas of impact are presented below by unit; these numbers are approximate because the alternative alignment is not yet in the design stage of development and could change. Because of rounding, numbers presented may not add up precisely to the totals provided.

- **Bowmans Island:** Newly constructed trails and adopted social trails would cross through approximately 1.1 miles of wetland. The use of helical piers to support the boardwalk would affect approximately 0.03 acres of

soil. The total surface area of the boardwalk would be approximately 1.5 acres.

- **Orrs Ferry:** Adopted social trails would cross through approximately 0.35 miles of wetland. The use of helical piers to support the boardwalk would affect approximately 0.01 acres of soil. The total surface area of the boardwalk would be approximately 0.5 acres.
- **Settles Bridge:** Newly constructed trails and the potential greenway would cross through approximately 0.02 miles of wetland. The use of helical piers to support the boardwalk would affect approximately 0.0006 acres of soil. The total surface area of the boardwalk would be approximately 0.03 acres. Restoration of trails would account for approximately 0.01 acres returning to natural conditions.
- **McGinnis Ferry:** Construction of the potential greenway would cross through approximately 0.01 miles of wetland. The use of helical piers to support the boardwalk would affect approximately 0.0003 acres of soil. The total surface area of the boardwalk would be approximately 0.01 acres.
- **Jones Bridge:** Restoration of trails would account for approximately 0.12 acres returning to natural conditions.
- **Holcomb:** Newly constructed trails cross through approximately 0.05 miles of wetland. The use of helical piers to support the boardwalk would affect approximately 0.002 acres of soil. The total surface area of the boardwalk would be approximately 0.07 acres.
- **Vickery Creek:** Newly constructed trails would cross through approximately 0.1 miles of wetland. The use of helical piers to support the boardwalk would affect approximately 0.003 acres of soil. The total surface area of the boardwalk would be approximately 0.15 acres. Restoration of trails would account for approximately 0.1 acres returning to natural conditions.

- **Gold Branch:** Restoration of trails would account for approximately 0.01 acres returning to natural conditions.
- **Cochran Shoals:** Restoration of trails would account for approximately 0.07 acres returning to natural conditions.
- **Palisades:** Newly constructed trails would cross through approximately 0.2 miles of wetland. The use of helical piers to support the boardwalk would affect approximately 0.008 acres of soil. The total surface area of the boardwalk would be approximately 0.3 acres. Restoration of trails would account for approximately 0.3 acres returning to natural conditions.

The following table summarizes the total impacts to wetlands park-wide (Table 13). In total, the construction of new trails or adoption of social trails crosses through approximately 1.8 miles of wetlands. The use of helical piers to support the boardwalks would affect approximately 0.06 acres, impacting 0.04% of the park’s total wetlands. The total surface area of the boardwalk would shade approximately 2.5 acres of wetlands, impacting 1.6% of the park’s total wetlands. Restoration of trails would account for approximately 1 acre, or 0.7% of the park’s total wetlands, returning the trails to natural conditions. When accounting for restoration, the total net impact to wetlands would be 1.5 acres, impacting 1% of the park’s total wetlands. While restoration will positively impact wetland health in the long term, restoration may result in short-term adverse impacts to the wetlands. Mitigation measures and best management practices would be implemented during trail restoration

to reduce the adverse impacts of restoring wetlands, including using salvaged topsoil and native vegetation in all restoration efforts and monitoring the success of restoration efforts.

The construction of boardwalks would result in a loss of wetland biotic function from removal of vegetation for the placement of helical piers for the boardwalk and potentially some larger vegetation (shrubs and trees) for placement of the boardwalks through forested wetlands. In addition, some continual adverse impacts to vegetation could result from shading caused by the boardwalks. Removal of trees of substantial size would be avoided to the extent possible to avoid impacts to natural resources and because the root systems make it difficult to drive the piers into the ground.

Following construction of the boardwalks, disturbed areas would be allowed to recover naturally or revegetated with native plant species. However, overall functions of the wetlands are not likely to be noticeably altered because of the small area of ground disturbance in relation to the total acres of wetlands present in the project area; approximately 150 acres of wetlands within the project area, accounting for 98.4% of total wetlands, would remain undisturbed. Remaining adjacent wetlands would continue to filter and convey precipitation and provide an important complex of habitats. Therefore, the actions proposed under the action alternative would not be expected to impact the long-term viability of wetlands in the park.

Under the action alternative, biking would be allowed on a total of 21.9 miles of trails, an increase of 10.3 miles when compared to the no-

Table 13. Summation of Impacts to Wetlands

Impact	Acreage Affected by Helical Piers	Acreage Affected by Boardwalk Shading	Acreage of Net Impact to Wetlands (accounting for restoration)
Construction of new trails and adoption of social trails	.06 acres	2.5 acres	1.5 acres
Percent of total wetlands	0.04%	1.6%	1%

action alternative. Due to more intentional design of the location and surface of multiuse trails under the action alternative, impacts to wetlands from bikes are anticipated to decrease under the action alternative. Implementing design standards outlined in appendix F for multiuse trails would mitigate impacts to wetlands from bikes because surveys would be conducted to certify and delineate wetlands within the project area prior to construction, wetlands would be avoided in final trail alignment to the extent possible, and elevated boardwalks would be used over unavoidable sections of wetlands. Multiuse boardwalk trails with bicycle use would provide more protection of wetland health and functionality than is currently provided.

CONCLUSION

Under the no-action alternative, impacts on wetlands would remain the same as described in the affected environment section. Actions proposed under the action alternative would result in an impact of 0.06 acres due to the insertion of helical piers in wetlands and an impact of 2.5 acres due to shading of wetlands from the new boardwalks. Construction of the boardwalks and the permanent placement of helical piers would have minor short-term impacts during construction and minor long-term impacts on the wetlands within the project area because these impacts account for the small percentage of up to 1.6% of the park's total wetlands. When accounting for restoring 1 acre of existing trails through wetlands, the total net impact to wetlands would be 1.5 acres, impacting the small percentage of up to 1% of the park's total wetlands. At units where there is less than 0.1 acre of total wetland disturbance, the trail implementation at that unit may be exempt from a wetland statement of findings as per Directors Order 77-1: *Wetlands Protection*, which establishes policies, requirements, and standards for implementing Executive Order 11990, *Protection of Wetlands* (42 Fed. Reg. 26961). Any associated compliance needs would occur at the time of trail implementation, as this is a 20-year plan and best management practices and mitigations may change prior to

trail construction. With the implementation of the mitigation measures outlined in chapter 2 and trail construction guidelines in appendix G, the impacts to wetlands would be minor because surveys would be conducted to certify and delineate wetlands within the project area prior to construction, wetlands would be avoided in final trail alignment to the extent possible, elevated boardwalks would be used over unavoidable sections of wetlands, and the appropriate compliance as per Director's Order 77-1 would occur. Therefore, no net loss of function to wetlands would occur from the project.

Visitor Use and Experience

Affected Environment (Current and Expected Future Conditions of Resources)

The Chattahoochee River trail system provides park visitors with a wide variety of recreational opportunities, including walking, hiking, dog walking, trail running, biking, horseback riding, birding/wildlife watching, and wildflower viewing, as well as access to picnicking and fishing. A diversity of scenic views and natural settings are found along the trails, including expanses of forest with little evidence of human disturbance, riverside and wetland environments, and landscapes from the historic and archeological past. Experiences along the trails range from highly social gatherings with medium-to-large hiking and running groups to more solitary pursuits.



The trail system serves as a primary recreational resource for nearly six million people in the Atlanta metropolitan area, providing a respite from urban life (USCB 2019). A 1998 visitor survey reported that 91% of park visitors are from Georgia and 88% of the visitors had previously visited the park. Approximately 56% of respondents had visited the park at least 10 times in the past year and 22% had visited the park at least 51 times during that period (NPS 2009).

Visitor Access and Circulation

The designated trail system at Chattahoochee River NRA is spread across 12 of the park's 15 units, though the mileage is heavily concentrated in Cochran Shoals, Palisades, and Vickery Creek. In addition to the designated trail mileage, many unauthorized user-created trails exist throughout the park, including in the three units with no designated trails. Many of these unauthorized trails have become so well established that visitors are not able to distinguish between designated trails and undesignated ones. These unauthorized trails, along with sometimes inconsistent signage, mapping, and trail marking lead to wayfinding challenges for visitors.

Given the vast network of both designated and undesignated trails and the park's location in a metropolitan area, access points to the trail system are numerous and varied. For example, the Cochran Shoals unit includes four official trailheads, though a review of a heatmap of fitness activity provided through a partnership with Strava Metro reveals at least a dozen other commonly used access points, and park staff indicates there are likely others that do not show up in this data (in the Strava Metro Dashboard). As many of these access points are unmarked and contain no orientation or safety information, visitors who access the park may or may not be aware that they have entered a national park unit and are likely unaware of any directions or precautions. As a result, park law enforcement has observed that fee compliance in some areas of the park can be as low as an estimated 40%.

Visitors travel to the park on foot, by bicycle, and by passenger vehicle. Those arriving by car can park in designated trailhead parking areas in many of the units. These designated parking lots are often full and overflowing at busy times. The park also has undesignated parking areas that tend to be used for convenience or as overflow when designated parking areas are full. These undesignated parking areas tend to be along city streets and/or in residential neighborhoods. Those arriving by bicycle can leave their bicycle at the trailhead except on designated multiuse trails at Cochran Shoals and Palisades.

Visitor Opportunities

The Chattahoochee River NRA trail system is extensive, with roughly 67 miles of designated trails and many more miles of undesignated trails. In addition to providing access to the trail system as described in "Visitor Access and Circulation," these unauthorized trails provide recreational opportunities by going to destinations and points of interest such as overlooks and secluded areas not reached by official trails. Unauthorized trails are also along the river and provide access to the river for fishing and other water's edge pursuits.

Visitors can walk, hike, jog, or run on all park trails, and these pedestrian activities are easily the most popular trail activities. Biking (including e-biking) is allowed on designated trails in the Cochran Shoals unit, specifically at Sope Creek and on the Fitness Loop, and in the Palisades unit along the Rottenwood Creek Trail. Horseback riding is allowed on designated trails in the western portion of the Bowmans Island unit. Dogs are allowed on all park trails, though they are required to be on a leash 6 feet or shorter and their owners are required to clean up any waste.

A variety of trail experiences are possible in the park in terms of trail character, frequency of encounters with other visitors, length, and difficulty. These options generally include shorter, circuitous routes that visitors self-select by piecing together portions of designated and undesignated trails. In many units, the trail system map resembles a "bowl of spaghetti," with numerous winding trails and frequent intersections, which

are numbered. Few designated or recommended routes exist, though many visitors may choose to follow routes indicated on social route-finding platforms like All-Trails or Strava. Generally, trails in units that are further north and further from Interstate 285 (“the perimeter”) have a more rugged, less-developed character and the frequency of encounters is generally lower as well. Throughout all the units, the character of many trails is defined by open utility corridors, adopted relict roadbeds, and trails that ascend and descend the along the fall line. As a result, many of the trails are difficult as visitors navigate steep climbs and descents on poor trail tread or trek along unshaded routes on hot, sunny days.

Examples of existing trail opportunities include (many more opportunities exist; these are provided solely for illustrative purposes):

- At Medlock Bridge, visitors can take a leisurely walk along the river from the parking area at MB3 and choose one of three routes to a high point on a hill (MB9) before descending back down to the river’s edge at MB5, continuing downriver to MB10, and returning by the same route. This would comprise a roughly 1.4-mile experience.
- At Cochran Shoals, a fitness-oriented visitor looking to get some miles in can walk laps

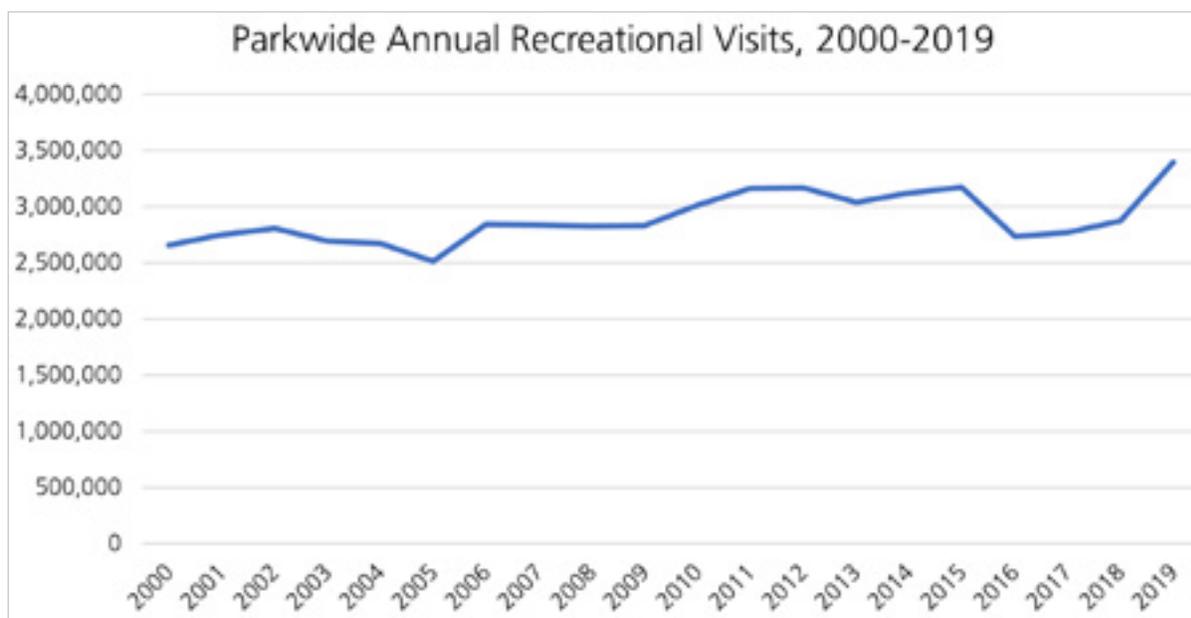
along the flat 2-mile Fitness Loop. They’d be likely to pass or be passed by many others on a run, including some local cross-country teams. Alternatively, they could ride their bike along the 9.4 miles of multiuse trails at Sope Creek, being sure to follow the directional signage for the day and allow oncoming pedestrians to pass safely.

- At Palisades, a visitor could walk the 10 miles of interconnecting loops with their friends, family, and leashed dog, or they could tackle the steep inclines in their trail running shoes. If they are starting at the Indian Trail entrance, they would likely want to plan their route to include a stop at the Devils Race Course Shoals overlook and possibly the bamboo forest.

Visitation Trends.

Visitation to the park has increased by 28% over the last 20 years. In 2000, the park had 2.7 million recreational visits to Chattahoochee River NRA. By 2010, this number had risen to 3.0 million. In 2019, this number had risen to 3.4 million. This increase has not been steady or linear, with many years during this time frame having fewer visitors than the previous year, and others experiencing dramatic increases as compared to the previous year (figure 2).

Figure 2. Parkwide Annual Recreational Visits, 2000–2019



A variety of factors could be contributing to these fluctuations, including weather patterns and economic conditions. Most recently, the COVID-19 pandemic likely influenced a decrease from 3.4 million visitors in 2019 to 3.1 million in 2020. The pandemic and associated social distancing measures have resulted in shifts to outdoor recreation patterns and increased volumes seen nationwide (Grima et al. 2020; NAXION Research Consulting 2021). The dip in annual visitation was a direct result of extremely low visitation when the park was closed during the first few months of the pandemic, a trend that reversed as the year continued. Trail counters showed a marked increase in post-pandemic trail use when comparing the three months before the pandemic began (December 2019, January and February 2020) to the same three months the year after the pandemic began (December 2020, January and February 2021; see figure 3). This comparison indicates that while the initial surge in increased outdoor recreation seen

shortly after the pandemic began is not likely to be sustained long-term (trail counts in May and June of 2021 were down by about 20% as compared to the May/June surge seen in 2020), some long-term residual increase in trail use from people who “discovered” the trail system during the pandemic is likely. This forecast is consistent with findings elsewhere studying the effect of the pandemic on outdoor recreation (Rice et al. 2021).

Given the high proportion of local use of the trail system, use generally tends to be concentrated on weekends and on mornings and evenings. Weekend use is about twice as high as weekday use, and two peaks in daily visitation tend to occur around 9:00 a.m. and 4:00 p.m. The summer months tend to be busier than the winter months. An extended discussion of visitor use patterns and levels on Chattahoochee River NRA’s trails can be found in appendix E in each “Existing Direction and Knowledge” section.

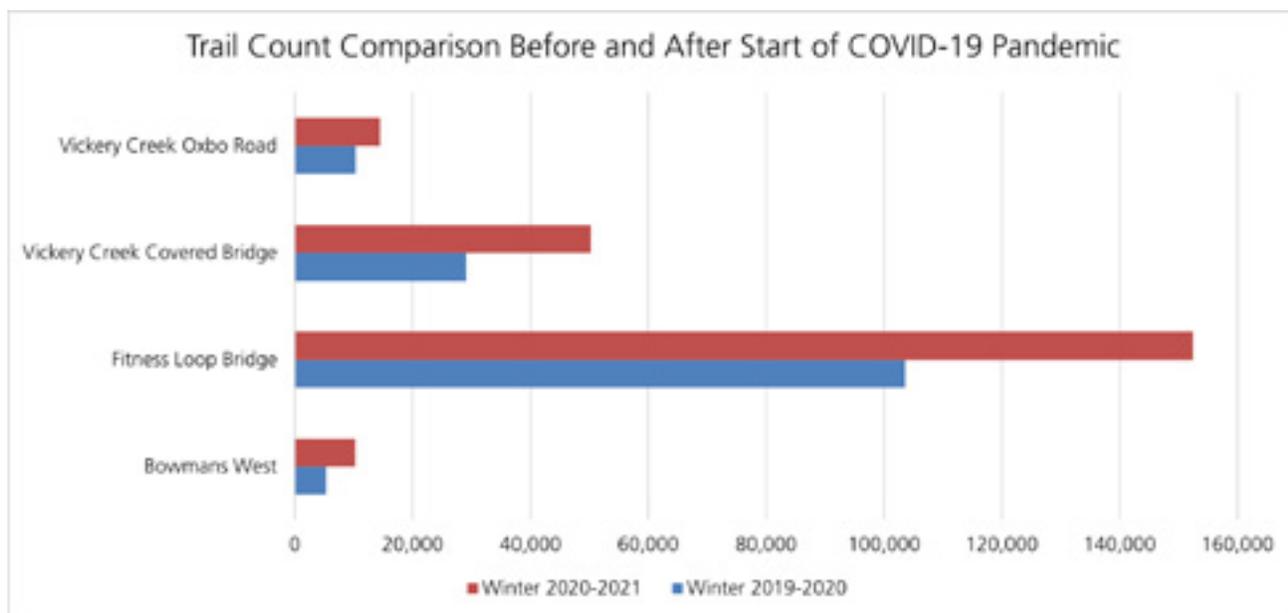


Figure 3. Comparison of Trail Counts Before and After Start of COVID-19 Pandemic

In addition to the temporal concentration of visitors, some units like Cochran Shoals, Palisades, and Vickery Creek tend to be much more popular with visitors than others. This usage can lead to perceptions that parts of the park are crowded or congested and contribute to visitor conflict. Multiple uses of some trails, particularly in Cochran Shoals, also contribute to these visitor conflicts. During civic engagement for the trails management plan in March and April 2021, commenters noted a desire for more trails to disperse users and decrease congestion and suggested various approaches to separate use types (NPS 2021a). These comments are reflective of the perception that some areas of the park's trail system are crowded and are becoming more so with increasing use levels.

Trail Management Trends

Trail management actions at Chattahoochee River NRA have expanded trail-based recreational opportunities for visitors in recent years, and more trail construction planned outside of this trails management plan would improve visitor access in future years. For example, the Crooked Creek Trail was recently completed in the Holcomb Bridge unit, adding less than a mile of trail-based opportunity in a unit that previously had none. The planned Hyde Farm trail system would add additional miles of trail to the Johnson Ferry unit.

Other efforts, including the addition of bicycle share stations to some trailheads, the expansion of the dog waste station program (Bag It & Bin It), and use of a text-for-status system to notify users of current trail conditions and related open/closed status for bicycles, have improved visitor access and experience in recent years.

Expected Future Conditions

Overall, the visitor use and experience on Chattahoochee River NRA's trail system is expected to deteriorate if visitation trends and current trail management continues. The deterioration of trails from erosion and use, combined with the piecemeal approach to trail improvements, would mean that trails become wetter, muddier, steeper, and more rutted,

making them less enjoyable to use. The expected continued increase in trail use would exacerbate these issues. Increasingly heavy use of the trails would also cause more erosion and potentially increase the frequency of trail closures related to resource and safety concerns. These reactive closures would reduce visitors' access, as they would have fewer areas to visit, and fewer locations would offer a particular type of use or experience that may be of interest.

In addition, anticipated increases in visitor use would also contribute to increased crowding, trail congestion, and visitor conflict that is already being reported by visitors in some areas at certain times. Achievement of desired conditions for opportunities for solitude, natural quiet, tranquility, and similar values would become increasingly difficult to achieve in some areas.

Increased challenges finding parking would also occur, affecting the access trail users have to the system. Crowding and congestion may also reduce visitors' ability to access the trail system. As trailhead parking lots begin to fill more frequently and potentially become overwhelmed, visitors could face the uncertainty or inability to find parking, thus preventing them from visiting certain portions of the trail system. Crowding and congestion may also lead to increased informal parking, which causes safety and resource concerns.

Impacts on Visitor Use and Experience ALTERNATIVE 1: NO ACTION (CONTINUE CURRENT MANAGEMENT)

Under the no-action alternative, impacts on visitor use and experience would remain the same, as described in the affected environment section. The current visitor use and experience trends and trail system management would continue unchanged. The continued increases in visitation would likely result in long-term adverse impacts to visitor use and experience as increased trail erosion, reactive closures, parking issues, crowding, congestion, and visitor conflict would cause the quality of the visitor experience to decline and could threaten visitor access to some areas as facilities become overwhelmed.

ALTERNATIVE 2: NPS PREFERRED ALTERNATIVE

Under the action alternative, approximately 32 miles of trails would be added to the Chattahoochee River NRA trail system. This 48% increase in designated trail miles would mean many more opportunities for hiking, running, dog walking, and other recreational pursuits. This additional trail mileage would be particularly impactful in areas where no designated trails currently exist. For example, a new trail system in the eastern part of Bowmans Island as well as the Orrs Ferry unit would provide new opportunities for visitors. The trail system would also approximately double in size at Settles Bridge and triple in size at Abbotts Bridge. Island Ford (2 miles), Cochran Shoals (6 miles), and Palisades (4 miles) would also see substantial increases in designated miles of trail available for recreation. All other units would have minor increases in designated trail mileage or no change. Since no decrease in designated trail miles would occur in any one unit, the overall beneficial impact to visitor access to trail-based recreational opportunities would be spread across the vast area of the park.

Many of these new trails would provide access to destinations and experiences not included in the current trail system. Examples of this include a riverside trail on the east side of Bowmans

Island that would also highlight steep slopes and exposed rock faces; the completion of a stacked loop at Medlock Bridge that would allow for longer recreational experiences along a ridge; and a redesign of the Palisades trail system to highlight overlooks, beach areas, and a bamboo stand quiet area. These new opportunities would represent a long-term beneficial impact to visitor use and experience.

Under the action alternative, there would be a number of individual trails that would be restored to natural conditions. In other words, some trail-based experiences, opportunities, destinations, and opportunities would be permanently lost from the trail system. In addition, all unauthorized visitor-created trails in the park would be restored to natural conditions, meaning many more miles of trails, unique destinations, and opportunities would be lost (this loss cannot be quantified, as not all social trails have been mapped). Relatedly, unauthorized trail accesses would be removed from the trail system, adversely impacting individual visitors who may routinely use these access points to gain entry into the park if their unauthorized trail accesses are not designated as a secondary access point. However, the overall adverse impact of these isolated lost experiences, access points, and opportunities would be outweighed in the



Photo Credit: Tom Wilson

long-term by the substantial overall increase in designated trail mileage and the formalization of the trail system and access (which would reduce the frequency with which visitors become lost on the trail system).

The action alternative includes measures that would improve the quality of the experience for visitors travelling along trails. Foremost among these measures would be the shifts in alignments from wide-open utility corridors and relict roadbeds to purpose-built, generally single track, natural surface trails. This change would mean that visitors would no longer be exposed to the hot Atlanta sun. Visitors would also have improved opportunities to connect with and experience nature in an intimate setting rather than from an open swath largely devoid of vegetation. The improved alignments would also generally follow contours rather than fall lines, making the trails easier from an aerobic challenge perspective as well as a footing and trip-hazard perspective. Some fitness-oriented visitors may experience the shift to contour alignments as an adverse impact, as several commenters remarked on the value they place on aerobic challenge during early civic engagement on the trails management plan, though effort was made during trail design to maintain aerobic challenges wherever possible and as consistent with desired conditions (Wimpey 2018). One specific change affecting visitors travelling along trails is the introduction of additional rock armoring. Past experience at Chattahoochee River NRA has shown that bikers may experience a short-term adverse impact from new rock armor, as it increases the incidence of wipeouts, but this adverse impact attenuates with time as bikers become accustomed to the location of the armor and learn how to ride on it. Despite this specific adverse impact to bikers, the overall impact to visitor use and experience from the improvements to trail alignment, maintenance, and tread would be beneficial.

The action alternative makes two notable changes to user types that are allowed on certain trails. Namely, bikers would gain access to another

2.5 miles of trail in the Cochran Shoals area, including one trail that provides access to the Fitness Loop along Gunby Creek, while horseback riders would no longer be able to ride the 3.2 miles of designated trail in Bowmans Island. The adverse impact to horseback riders would likely be minimal, as park staff estimates only a few riders per year use these trails and very few comments regarding the proposed removal of equestrian use were received during civic engagement (NPS 2021a). Meanwhile, the beneficial impact to bikers would be quite substantial as this is a popular activity in Cochran Shoals, and the addition of more bikeable mileage would be welcome. The net effect of the changes in allowed use type under the action alternative would be beneficial, as it would benefit many more users than it would adversely affect.

The increase in mileage available to bikers could have the potential to increase visitor use conflicts. Conflicts between visitors on bikes and visitors on foot is a known issue in on the Sope Creek trails as described in the Visitor Conflict indicator in appendix D. Conflicts are also known to occur between traditional bikes and e-bikes on trails used by people mountain biking (NPS 2021e). However, if conflicts reach the trigger or threshold points described in that indicator, several management strategies would be implemented to reduce conflicts and improve the quality of visitors' experience. These strategies include educating the public, as well as piloting and potentially permanently establishing separate bicycle and pedestrian trails where visitor conflicts are a recurring issue. While the latter of these strategies would adversely affect visitor access, as some users could no longer use some portions of the trail system, this impact would be outweighed by the dramatic improvement in the quality of the experience if and when conditions deteriorate to trigger or threshold levels and this remedy is used.

Visitor wayfinding and circulation would be greatly impacted under the action alternative. Consistent standard amenities, including signage at trailheads and primary trail access points,

would help ensure that visitors have a better sense of how the trail system is laid out and can better prepare for their activity. These amenities would provide an inviting gateway into the park, ensuring that visitors are aware they are entering a national park unit, have appropriate expectations about their upcoming experience, and are aware of any pertinent rules and regulations. The primary and secondary access points would also help ensure that the trail system is better connected with surrounding communities and would help facilitate access from these communities, possibly even reducing the need for visitors to drive to a trailhead to gain access to the park.

The simplified trail routes with fewer intersections would also make wayfinding easier for visitors. When compounded with better standard signage and the removal of unmarked and unmapped social trails, visitor use and experience would benefit from these changes, as visitors spend less time trying to navigate, potentially getting lost, and more time enjoying the trail. Experience has shown that naming the trails and trailheads rather than depending on the complex system of numbered trail intersections would beneficially impact visitors' experience, translating to more time enjoying trails and less time spent navigating.

Adding portions of a potential multiuse greenway would add another 11.7 miles of trail-based recreational opportunities to the Chattahoochee River NRA trail system, beneficially impacting pedestrian users as well as those looking for a moderately difficult biking opportunity in the park. Currently, only the Rottenwood Creek and Fitness Loop trails provide this kind of opportunity, so the change would roughly triple the available trail mileage and spread it more evenly across the park units. The greenway would also provide connectivity between different park units, as well as with surrounding trail networks in the local community. Another beneficial impact would be the new opportunity for extended riverside experiences along a linear

trail. Altogether, the linear connectivity of the park's and surrounding area's trail systems would be greatly improved, providing opportunities for much longer experiences.

The multiuse nature of the greenway could lead to more visitor conflicts between pedestrians and traditional bikes, between pedestrians and e-bikes, and between traditional bikes and ebikes. However, the wide nature of the greenway trail (between 5 and 10 feet), would likely provide enough space between users to avoid excessive conflicts. What's more, several studies have shown that a majority of non-e-bike users do not notice when they are sharing the trail with e-bikes (Nielson 2019a). Additionally, while there is a widely held perception that e-bikes can be unsafe due to the speed they travel; a study of speed data showed that people using e-bikes generally travel at similar speeds as traditional bicycles on roadways, off-street paths, and natural surface trails (Nielson 2019b). All bicycles, including bikes and e-bikes, are subject to a 15-mile-per-hour speed limit in the park, so any impacts to safety from speed are a non-issue. The availability of the greenway trails to e-bikes may also make the park more accessible to older adults and others with mobility challenges who may not access the park using a traditional bicycle or on foot.

The greenway would likely have some adverse impact to the continuity of experience for trail users at Settles and Jones Bridge, where the greenway interacts with the traditional trail system. The greenway would have a decidedly different character in terms of width, tread, use level, and design, which may interrupt a user's experience if they want to stay on single-track, natural-tread trails with comparatively lower use. However, the points of interaction between the greenway and the single-track trail system are very short, and the situation would be similar to what currently occurs in Cochran Shoals between the Fitness Loop and upland single-track trails. Therefore, this impact would be relatively minor, though long term.

The use of ABA Accessibility Standards to improve the accessibility of trails would benefit visitors of differing abilities. Improved information about the condition and difficulty of trails would allow visitors of all abilities to make informed decisions about which trails to use, thereby improving the overall quality of their experience at the park as it generally aligns with their expectations.

The suite of management strategies included in the indicators, thresholds, and visitor capacities would generally have beneficial impacts to visitor use and experience. Educational strategies like encouraging visitors to visit lower-use trails and visit trails at lower-use times, providing information about times and places where elevated use levels can be expected, providing information about available parking, and providing information about where more opportunities for solitude and quiet may be found would all help visitors find experiences that are more aligned with their expectations, thereby improving their experience.

Similarly, engineering strategies like installing boardwalks in wet areas, incorporating passing areas along trails, and possibly installing a restroom facility at the Chattahoochee River Environmental Education Center would all make visiting the park's trail system a more pleasant experience.

The management strategies included in the indicators, thresholds, and visitor capacities would also be likely to have some adverse impacts to visitor use and experience. Specifically, temporarily closing trails after maintenance or near cultural resources or sites would limit access to those areas and adversely impact visitor access for the duration of the closure. Increased parking enforcement may increase the number of negative interactions with law enforcement that some visitors have during their visit to the park. Posting signs indicating that parking is full and that visitors should return at a later time may not align with some visitors' expectations or schedules and could lead to perceptions that

the park is not as accessible. If the trigger or threshold for the number of visitor complaints for Conflicts with Dogs indicator is reached, the related pilot or permanent probation on dogs in certain areas with high concentrations of user conflicts could also impact perceptions of park access for some park visitors that prioritize visiting the park with their pet. However, if and when the trigger or threshold point is reached, the resulting beneficial impact on the quality of visitors' experience due to the decrease in conflicts would likely outweigh the impact from the loss of access to some destinations.

CONCLUSION

Under the no-action alternative, impacts on visitor use and experience would remain the same as described in the affected environment section. Actions proposed under the action alternative would result in both beneficial and adverse impacts to visitor use and experience. Most of the adverse impacts, however, would be relatively minor in that they would last for only a short time, affect a small minority of visitors, or relate to a small geographic fraction of the park. These impacts would generally be outweighed by related beneficial impacts. Specifically, the loss of individual trails would be outweighed by the overall increase in trail opportunities; the loss of unauthorized individual access points and well-loved social trails would be outweighed by the benefits of consistently appointed access points and clear wayfinding used by all users; the loss of aerobic challenges in some areas would be outweighed by the benefits of a purpose-built trail system parkwide; and so on. Overall, the action alternative would beneficially impact visitor use and experience.

Archeological Resources

Affected Environment (Current and Expected Future Conditions of Resources)

The archeological record suggests that human habitation began in the Georgia Piedmont between 10,000 to 12,000 years ago. Early human history in the region is divided into several periods, defined largely by changes in tool making, ceramics production, and subsistence

strategies. These begin with the Paleoindian period (9500 BCE–8000 BCE) and proceed through the Archaic period (8000 BCE–1000 BCE), the Woodland period (1000 BC–1000 AD), and the Mississippian period, which came to a sudden end around 1550 CE with the arrival of Spanish invaders and European diseases (NPS 2009; Gerdes and Messer 2007).

Approximately 200 known archeological sites are in the park and likely many more yet to be discovered. The most common site types in the park are artifact scatters, which include ceramic scatters, lithic scatters, historic artifact scatters, and scatters encountered in association with rock shelters, open habitations, or villages. Archeological resources in the park attest to millennia of cultural continuity and change and the adaptations of various peoples to the landscape, including the area’s earliest human occupants to the Creek and Cherokee Nations and European-descended farmers and industrialists. The Chattahoochee River shaped and directed this cultural landscape, providing food and irrigation for Woodland period inhabitants, serving as a transitory border between the Creek and Cherokee Nations, and furnishing power for 19th and 20th century mill operations (NPS 2009; Gerdes and Messer 2007).

The area around the park has been occupied by humans since the Archaic period. However, before the arrival of Europeans, the area was



most extensively occupied during the Woodland period, and numerous sites from this time can be found in the park along the river corridor (O’Grady and Poe 1980). The Woodland period is one of the least-investigated periods in Georgia’s pre-European history, and it represents an area of potentially high archeological significance and research potential for the park. Archeological remnants of early human habitation found throughout the park include village sites, fish weirs, rock shelters, quarries, and numerous artifact scatters.

Early European settlers in the region brought with them agricultural tools and a variety of crops that broadened the agricultural base of both European and Native American populations, the latter adopting some cultural aspects of the former. Family farming became the primary activity in the river corridor and peaked between 1910 and 1920 when, for a variety of reasons, including soil exhaustion and the introduction of the boll weevil, farming declined. Industrial exploitation of the Chattahoochee River in the form of water-powered mills generally expanded as agriculture declined, although the mills in the park were abandoned in the early 20th century. Archeological sites dating to the period after the arrival of Europeans are found throughout the park and include pre-Civil War home sites and farmhouses (including standing chimneys); early ferry crossings; Civil War gun positions; terraces and earthworks; relict railroad beds; and industrial ruins (NPS 2009; Gerdes and Messer 2007). Prominent among the latter include the Akers mill ruins in the Palisades unit, the Marietta paper mill ruins in the north of the Cochran Shoals unit, and the large Ivy Mill/Laurel Mill/Roswell Manufacturing Company ruins complex in the south of the Vickery Creek unit.

The park does not have an official NPS archeological overview and assessment, and at present, approximately 30% of its area has been surveyed (at various intensities) for archeological resources. Existing archeological studies include a mix of large-area reconnaissance survey and systematic surface survey but have mostly been targeted studies that focused on assessing sites

before ground-disturbing activities, such as road widening, bridge building, trail building, and boat ramp improvements. Most of the park has not been systematically surveyed or inventoried for archeological resources, and precise information about the location, characteristics, and significance of most known archeological resources in the park is incomplete. Threats to archeological resources throughout the park include natural processes, such as wind and water erosion and encroachment by vegetation, as well as anthropogenic threats such as vandalism, looting, inadvertent damage by visitors—especially associated with the creation of unauthorized social trails and development inside and outside of the park (including private inholdings) (NPS 2009).

Impacts on Archeological Resources

ALTERNATIVE 1: NO ACTION (CONTINUE CURRENT MANAGEMENT)

Under the no-action alternative, impacts on archeological resources would remain the same as described in the affected environment section. The current resource threats of erosion, vegetation encroachment, vandalism, looting, inadvertent damage by visitors, and development would continue to occur.

ALTERNATIVE 2: NPS PREFERRED ALTERNATIVE

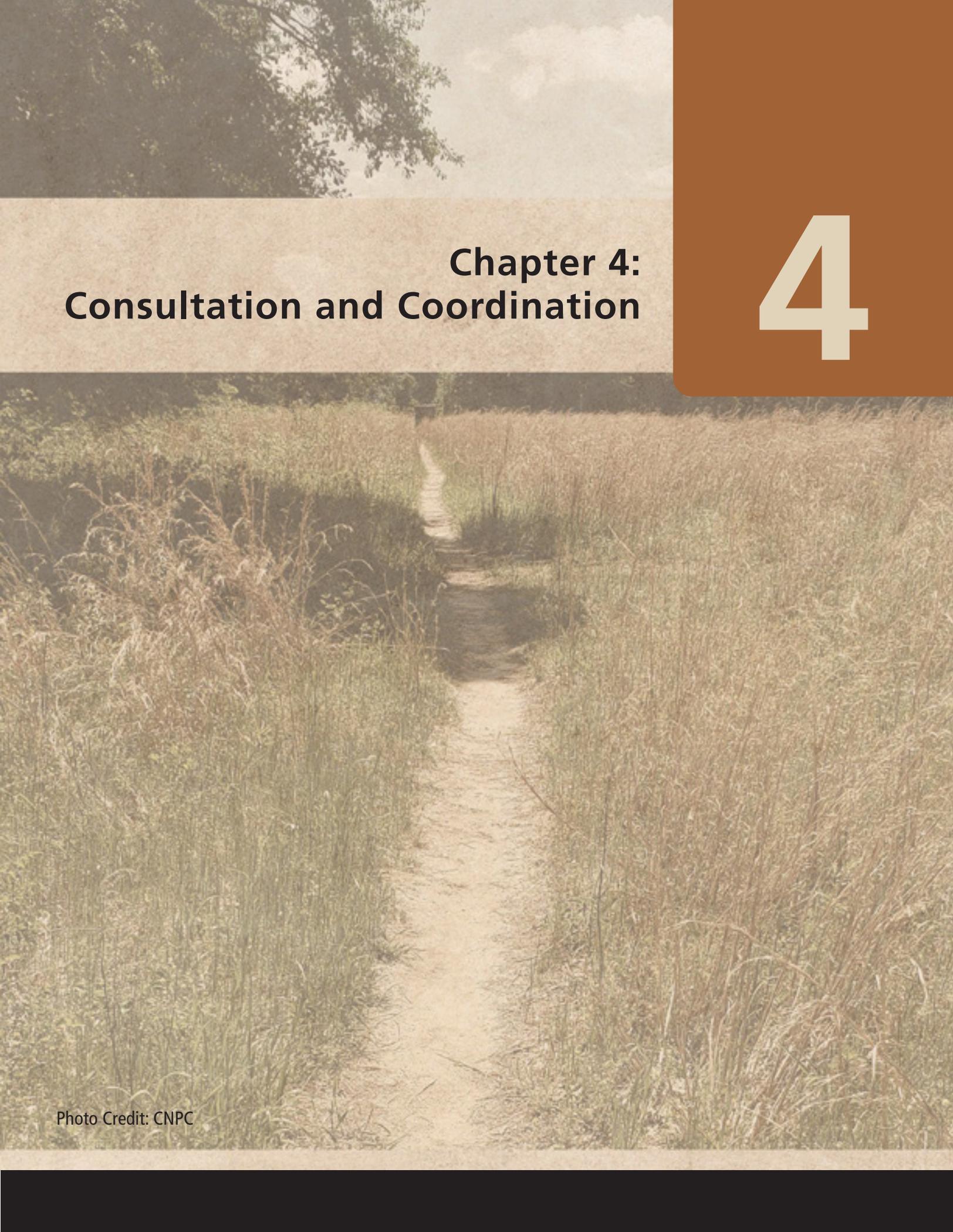
Preliminary analysis has indicated that proposed trail work, including ground disturbance associated with the closure of existing trails or the construction of new trails, would occur in the vicinity of known archeological resources. Ground disturbance has the potential to negatively impact archeological resources, as does the potential removal of sensitive artifacts from the field as a last-resort preservation/protection measure, but the closure of trails in archeologically sensitive areas may have long-term benefits.

Parkwide, a low percentage of park lands have been surveyed for archeological resources, including areas with proposed project work, and so there is the potential for impacts to unknown archeological resources. Furthermore, geospatial data for known archeological resources is not always sufficiently accurate to allow the identification of resources in project impact areas. Therefore, the identification of impacts to archeological resources must occur through surface survey and analysis ahead of project implementation. At this time, a programmatic agreement is under development with affiliated tribes and the Georgia State Historic Preservation Office. It would provide a process to complete appropriate archeological surveys and National Register of Historic Places eligibility determinations prior to implementation of individual trail projects that make up the preferred alternative. The agreement would also provide for minimizations or avoidance procedures to ensure that any possible impacts to historic properties are minimized or eliminated. Under the action alternative, the execution of the programmatic agreement developed in cooperation with the state historic preservation officer and affiliated tribes would ensure no significant impacts to archeological resources during the implementation of the trails plan. The programmatic agreement would be finalized prior to the decision on the trails plan.

CONCLUSION

Under the no-action alternative, impacts on archeological resources would remain the same as described in the affected environment section. Under the action alternative, the execution of the programmatic agreement developed in consultation with the state historic preservation officer and affiliated tribes would ensure that the section 106 compliance process would minimize or avoid any impact to archeological resources during the implementation of the trails plan.

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Chapter 4: Consultation and Coordination

4

Photo Credit: CNPC

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Chapter 4: Consultation and Coordination

Public Involvement

Civic engagement began in 2018 to inform the trails management plan and environmental assessment. During this time, the public and stakeholders were invited to share relevant information for the planning process. The project team introduced an online geo-focused public comment tool (named Social PinPoint) to collect feedback on trail- and recreation-related issues at each individual unit. The comments received from this process informed the creation of preliminary strategies.

After the first round of civic engagement, the planning team refined preliminary strategies, which went out for public review from March 15 to April 15, 2021. The purpose of this civic engagement period was to obtain public feedback on preliminary management strategies to assist with the development of the plan. During this time, the public was invited to submit written comments via the Planning Environment & Public Comment (PEPC) online interface and to submit spatial comments through an interactive story map website.

Two virtual public meetings were held to discuss the trails plan and answer questions about the project on Thursday, March 25, 2021, at 6:30 p.m. (ET), and on Friday, March 26 at 1:30 p.m. (ET). During the virtual meetings, NPS staff explained the plan process, showcased methods for public comment, and answered participants' questions.

A summary of public feedback was presented in the spring of 2021 and posted on the PEPC website (see appendix G). The draft comprehensive trails management plan reflects the suggestions, ideas, and concerns shared by the public in the last round of civic engagement.

In addition, targeted engagement occurred with a variety of stakeholders beginning in the spring of 2021 and will continue as appropriate as this project progresses. These stakeholders include the Chattahoochee National Park Conservancy, the Chattahoochee RiverLands Working Group, Trust for the Public Land (TPL), Roswell Creekways, the City of Sugar Hill, the City of Roswell, the City of Sandy Springs, and the City of Johns Creek.

Agency Consultation

During preparation of this trails management plan, members of the planning team met and/or consulted with various entities.

US Fish and Wildlife Service

Via the Information for Planning and Consultation website for the US Fish and Wildlife Service, the National Park Service requested the most recent list of species and their designated critical habitat

protected under the federal Endangered Species Act that may be impacted by projects in Chattahoochee River National Recreation Area. This action served as a record that the National Park Service had initiated informal consultation with the US Fish and Wildlife Service pursuant to the requirements of the Endangered Species Act and NPS management policies.

Georgia Department of Natural Resources

The park has informally consulted with the Georgia Department of Natural Resources (GADNR) throughout the planning process. National Park Service staff included GADNR representatives on distribution lists related to public comment periods for the various drafts of the plan (and resulting public comment summary documents).

State Historic Preservation Office

The park sent a letter to the Georgia State Historic Preservation Office on March 26, 2021, to initiate section 106 compliance for the plan. The trails management plan was also discussed during the statewide biennial meeting May 6, 2021, to meet the requirements of the NPS Nationwide Programmatic Agreement.

Tribal Consultation

The park sent letters to initiate section 106 compliance for the plan on March 26, 2021, to the Absentee Shawnee Tribe, Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Cherokee Nation, Coushatta Tribe of Louisiana, Eastern Band of Cherokee Indians, Kialegee Tribal Town, Muscogee (Creek) Nation, Poarch Band of Creek Indians, Seminole Nation of Oklahoma, Seminole Tribe of Florida, Shawnee Tribe, Thlopthlocco Tribal Town, and United Keetoowah Band of Cherokee Indians of Oklahoma.

United States Army Corps of Engineers

The park has informally consulted with the US Army Corps of Engineers (USACE) throughout the planning process. National Park Service staff included USACE representatives on a distribution list related to public comment periods for the various drafts of the plan (and resulting public comment summary documents). Park staff also presented on the trails plan at a river stakeholder gathering hosted by the City of Roswell, which included the USACE Lanier operations project manager.

A person wearing a white long-sleeved shirt, dark shorts, and a helmet is riding a bicycle on a dirt path through a forest. The path is surrounded by trees and fallen leaves, suggesting an autumn setting. The lighting is warm and natural, with shadows cast on the ground.

Appendices

A-H and References

Photo Credit: Philip Hodges

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Appendix A: Unit Maps, Alternative 1, No Action (Existing Conditions)

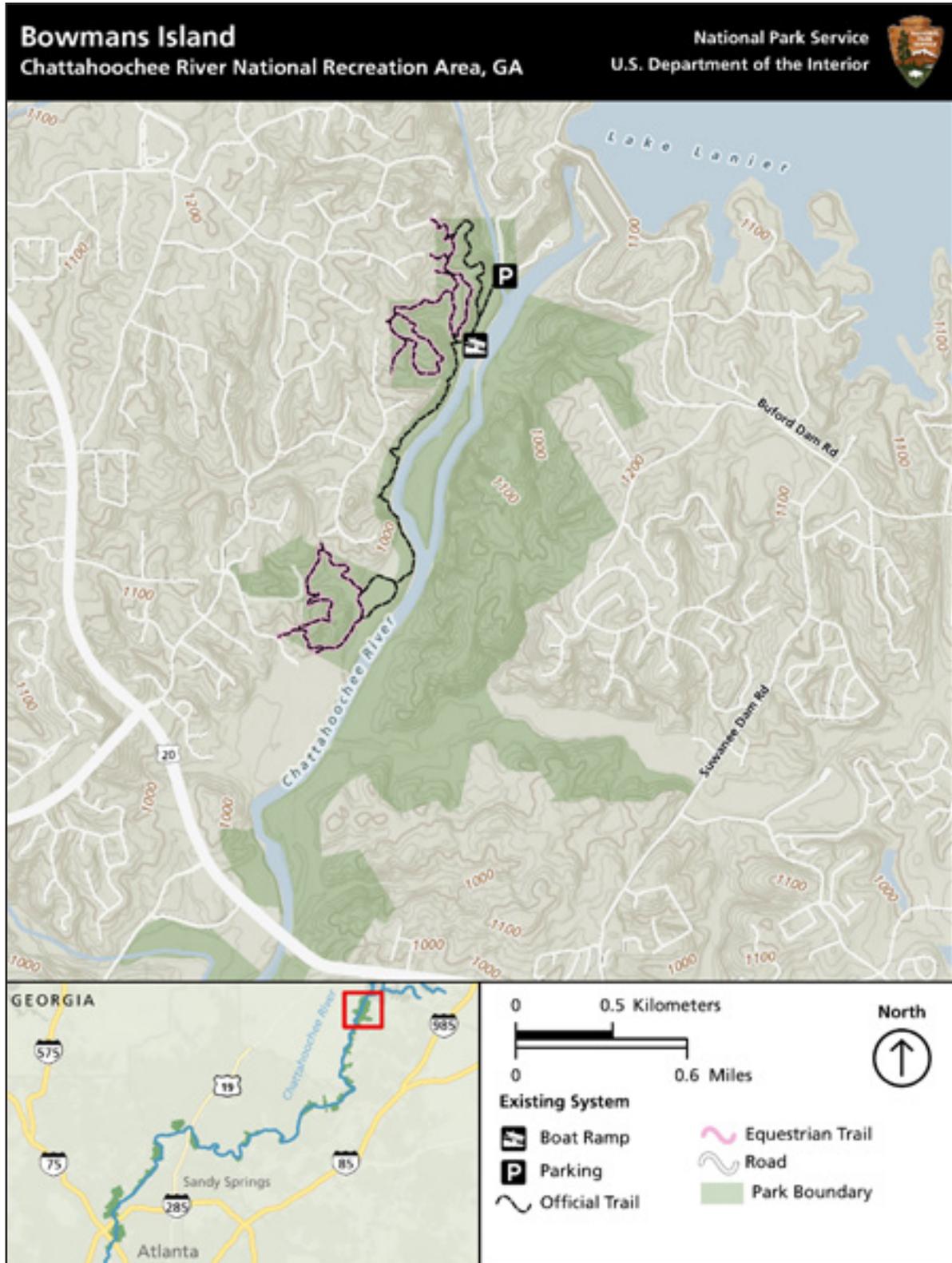


Figure A-1. Existing Trail System – Bowmans Island

Bowmans North Detail

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

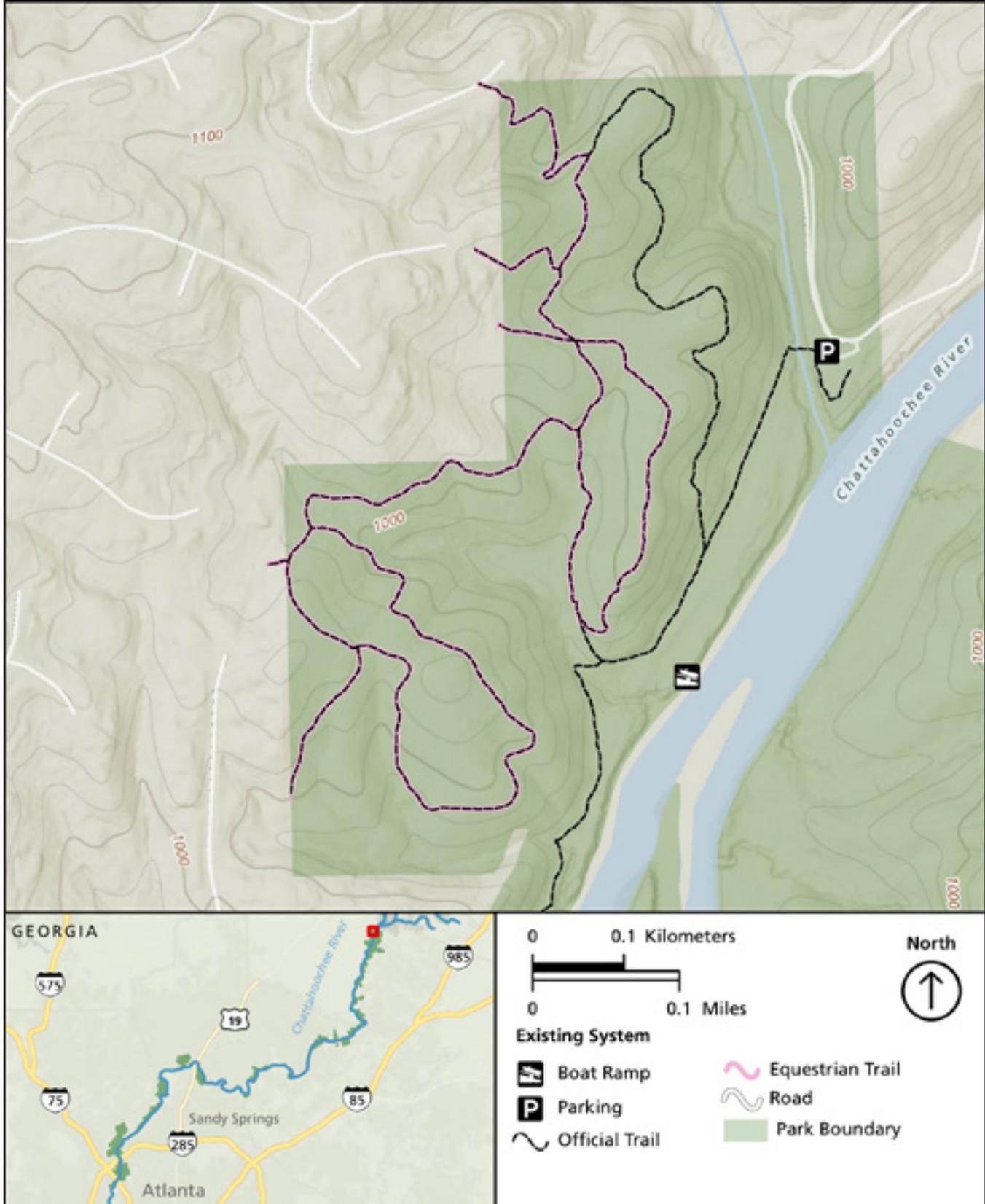


Figure A-2. Existing Trail System – Bowmans Island North

Orrs Ferry Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

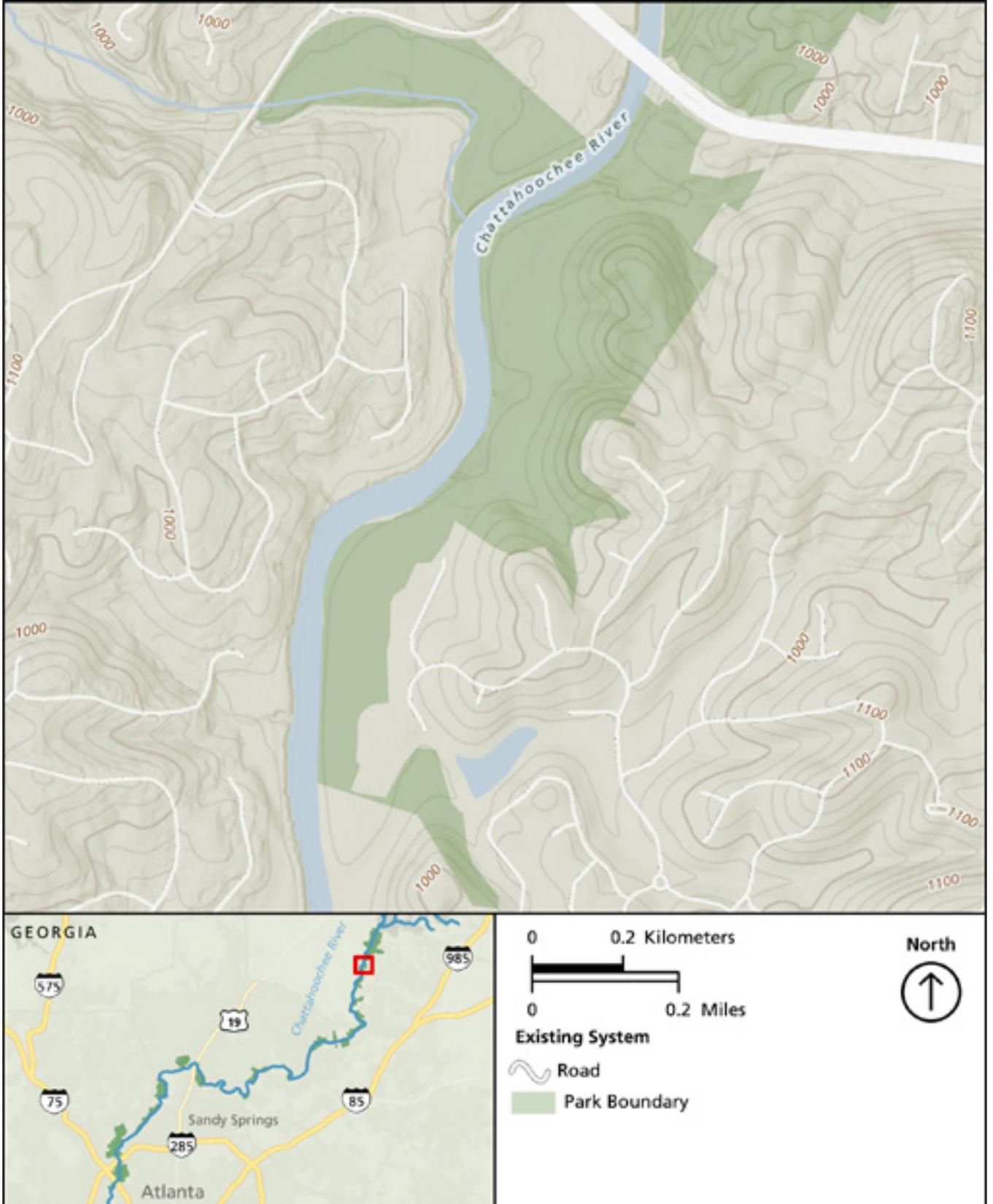


Figure A-3. Existing Trail System – Orrs Ferry

Settles Bridge
 Chattahoochee River National Recreation Area, GA

National Park Service
 U.S. Department of the Interior

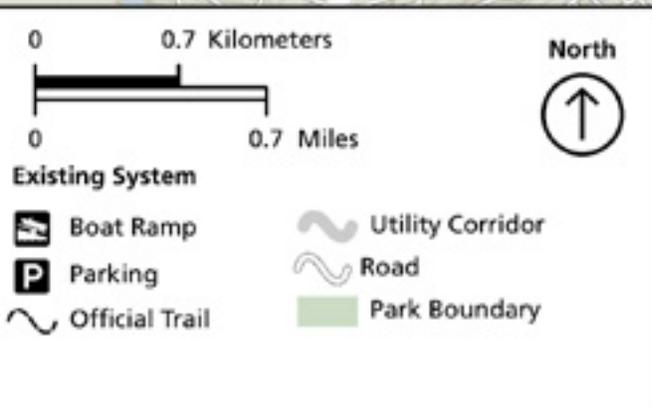
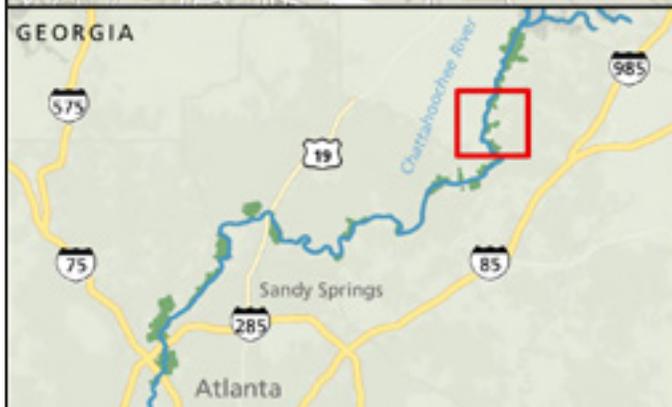
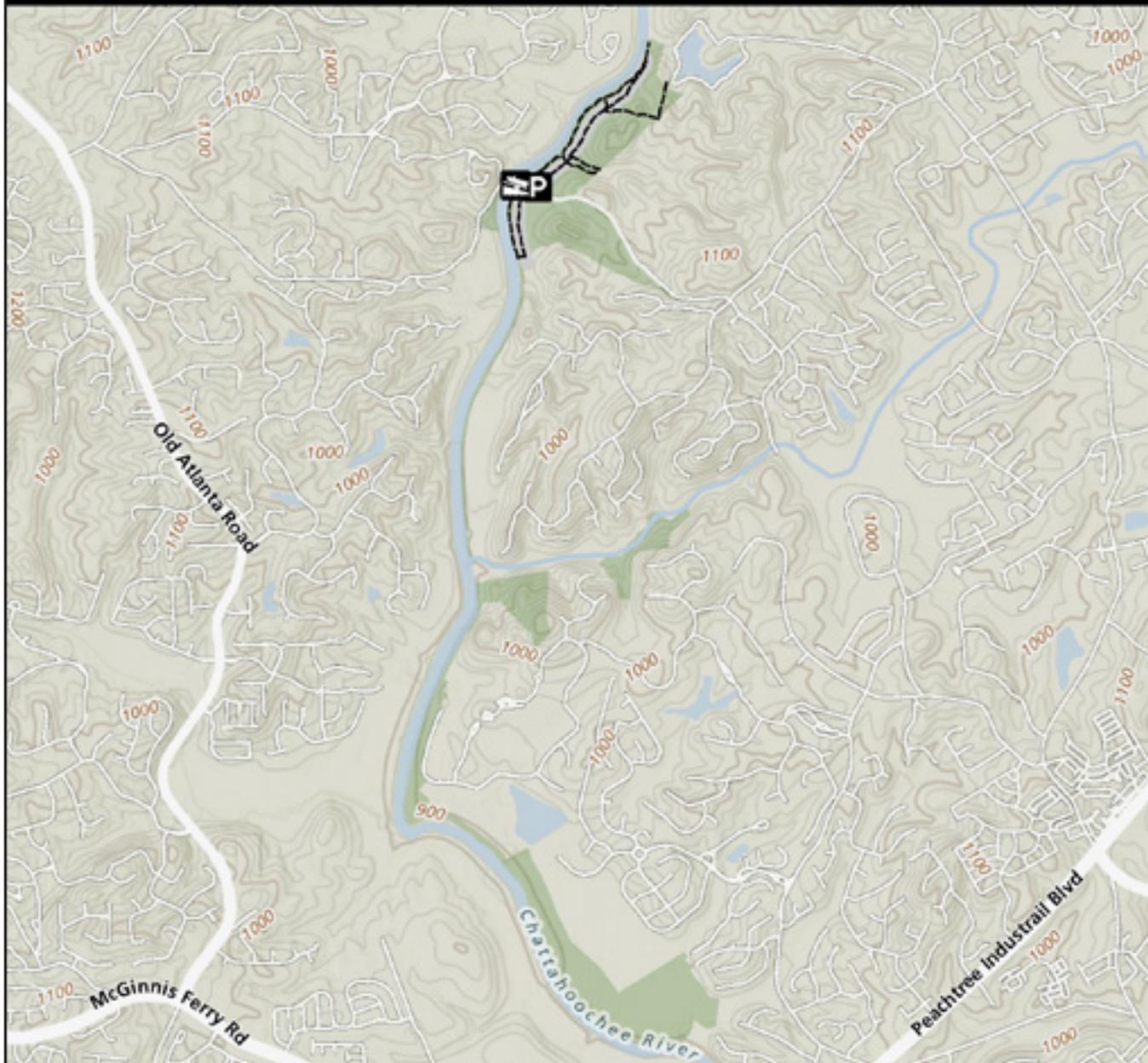


Figure A-4. Existing Trail System – Settles Bridge

Settles Bridge North Detail

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

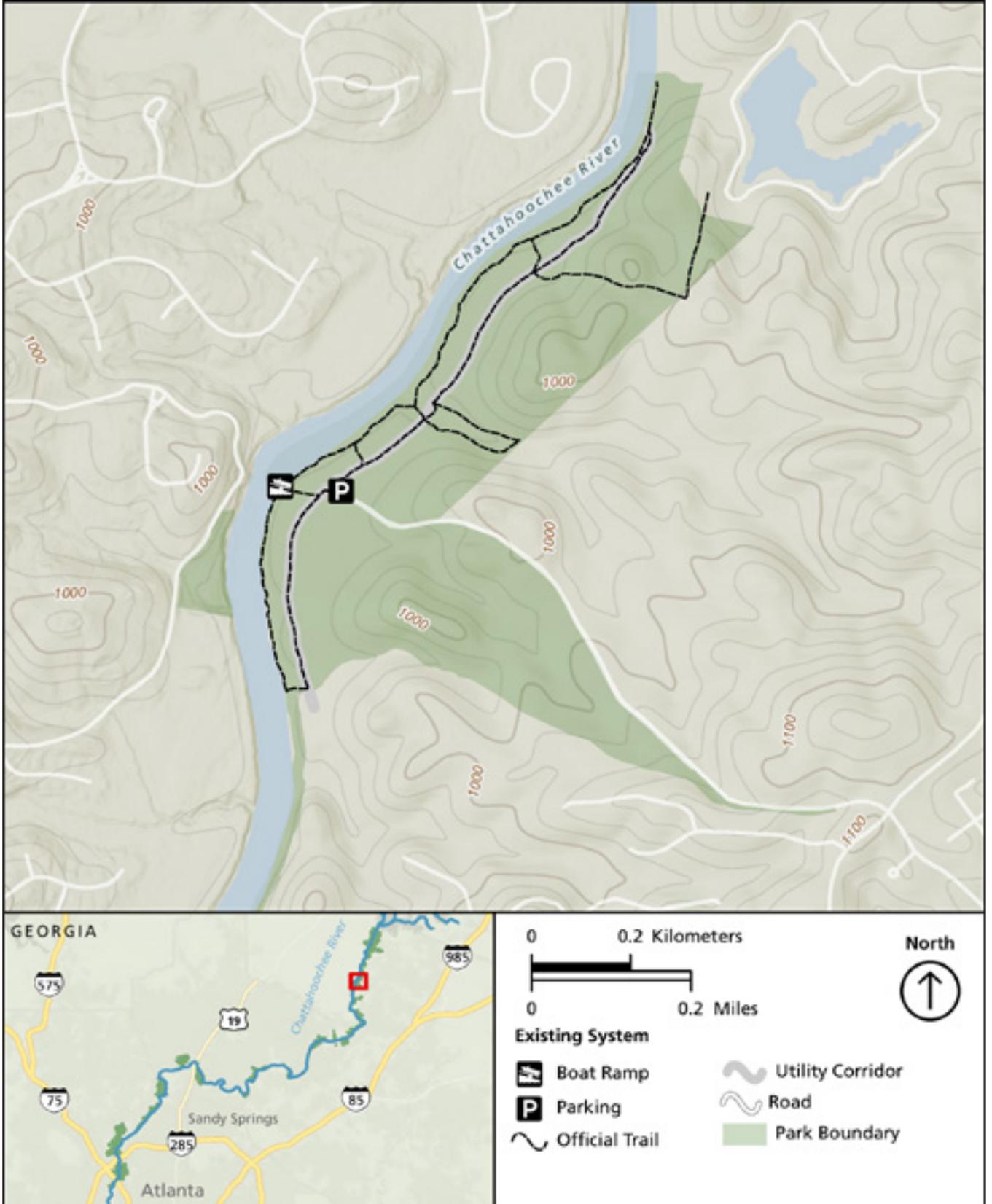


Figure A-5. Existing Trail System – Settles Bridge North

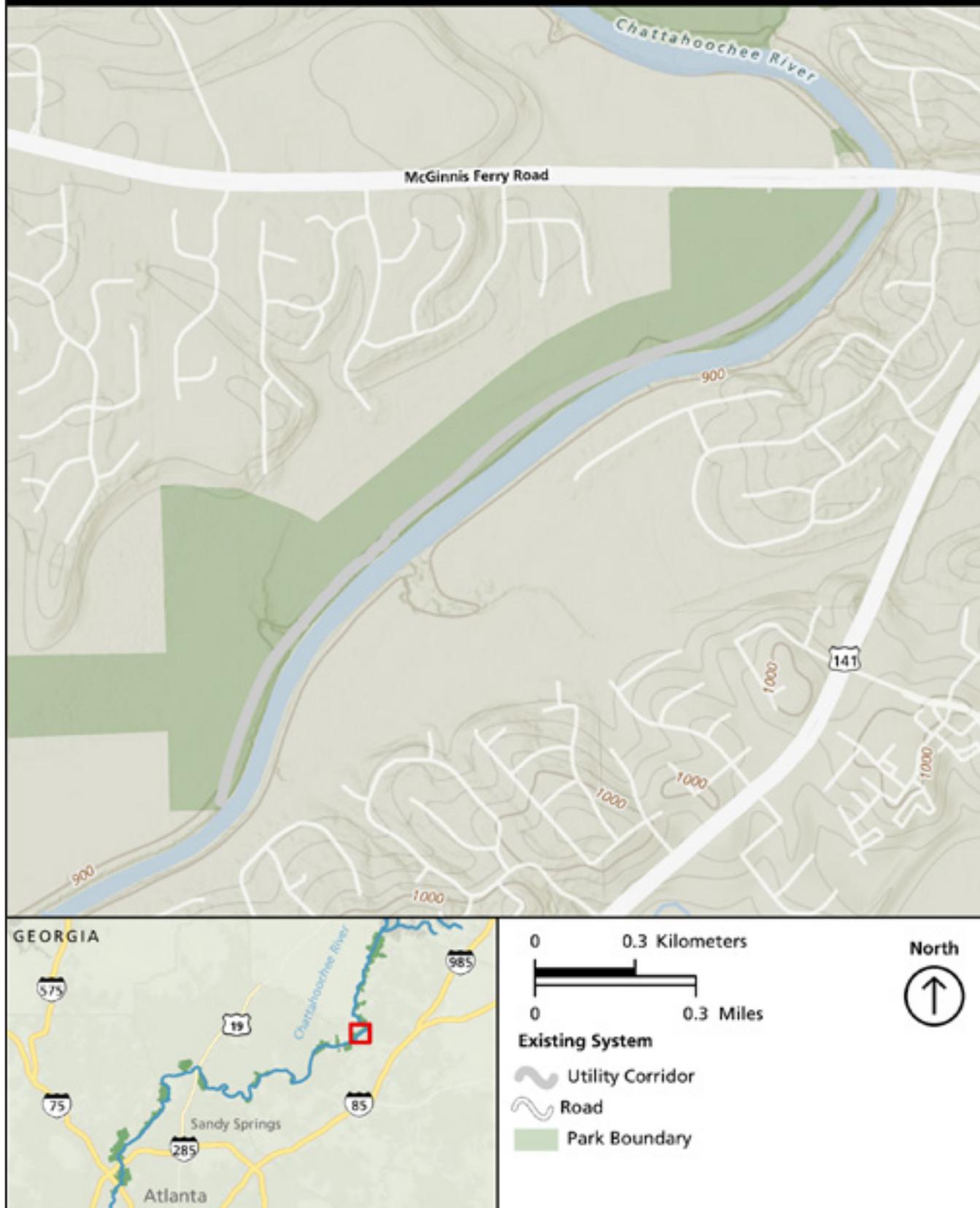


Figure A-6. Existing Trail System – McGinnis Ferry

Suwanee Creek Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

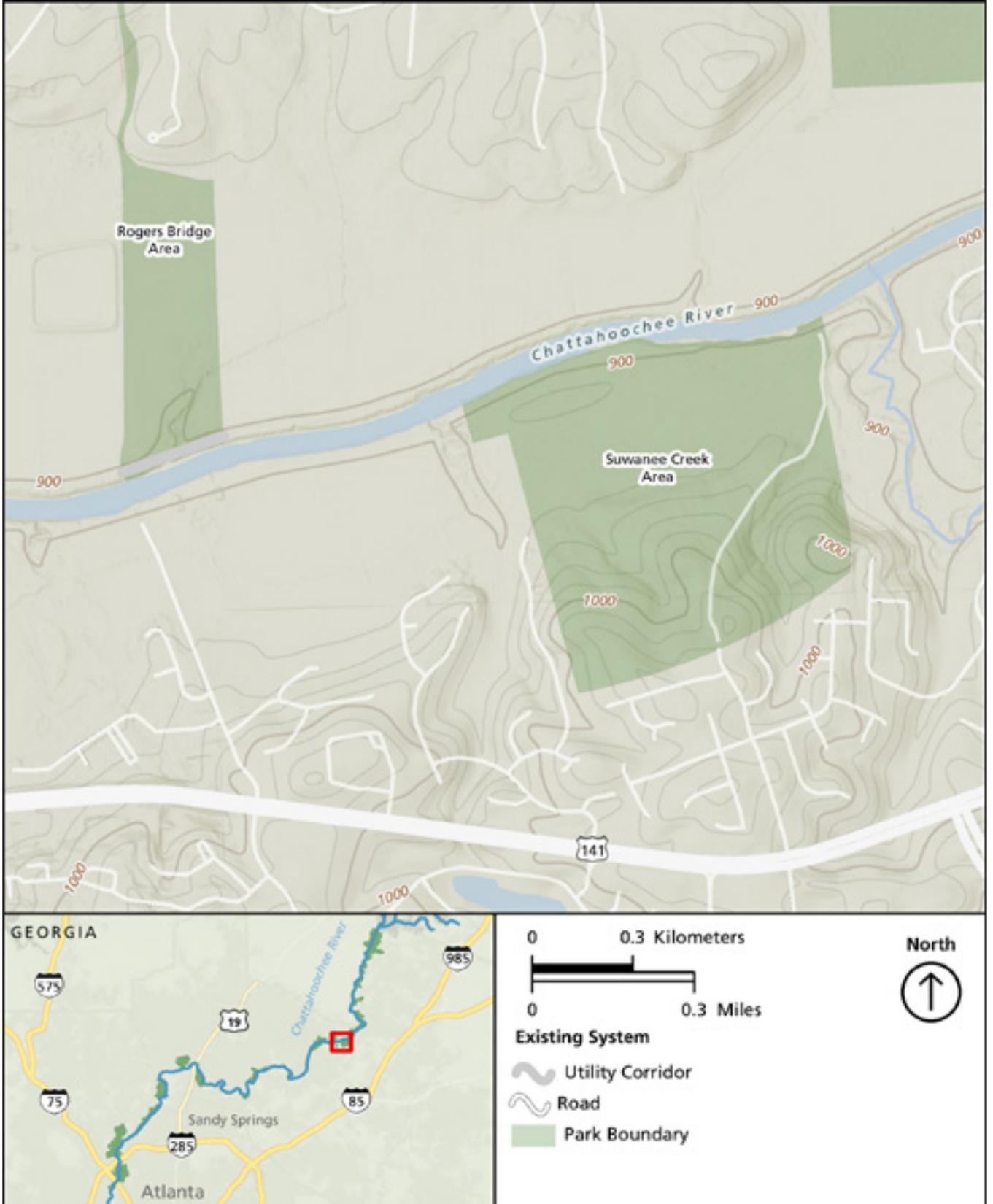


Figure A-7. Existing Trail System – Suwanee Creek

Abbotts Bridge Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

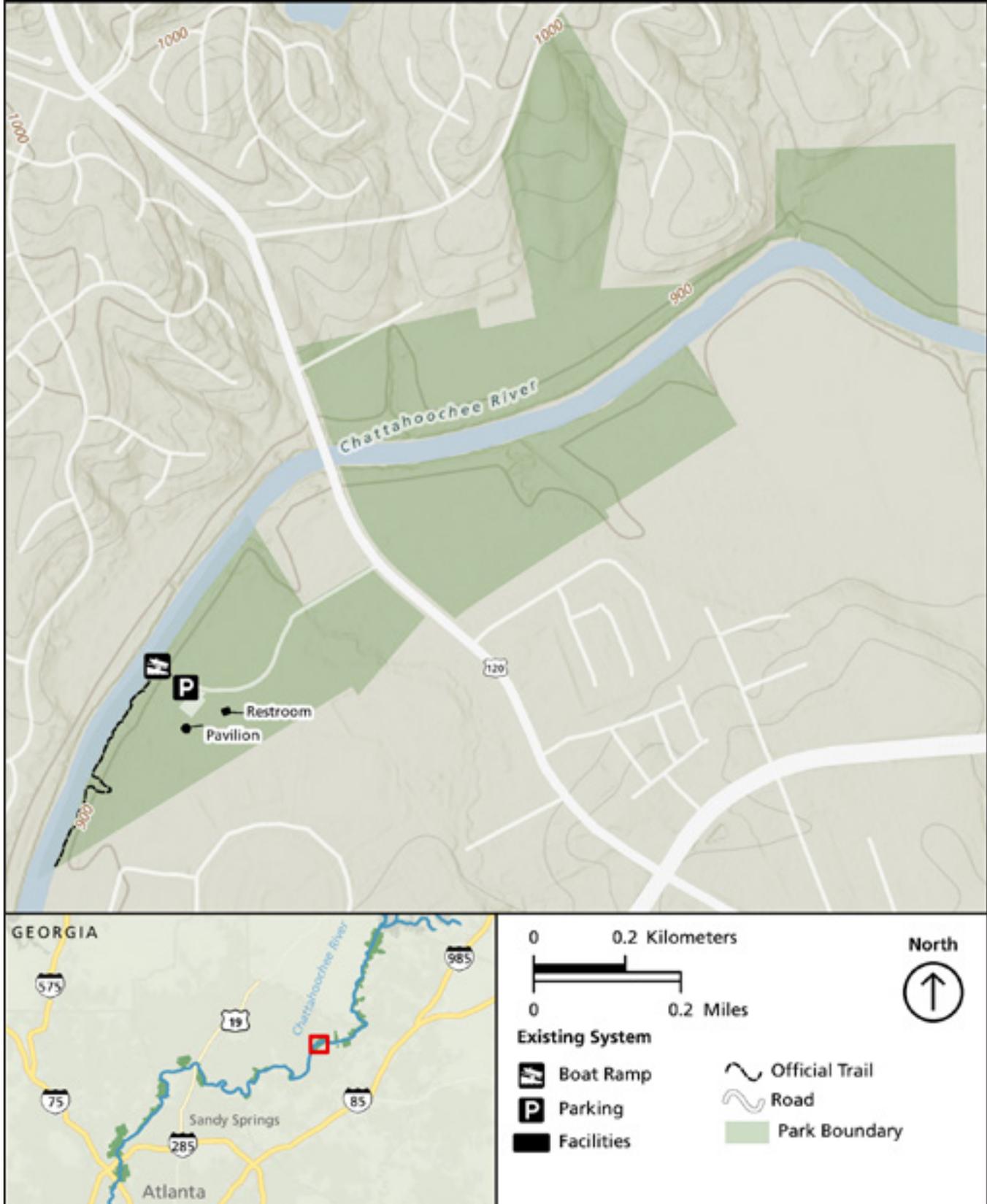


Figure A-8. Existing Trail System – Abbotts Bridge

Abbotts Bridge South Detail

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

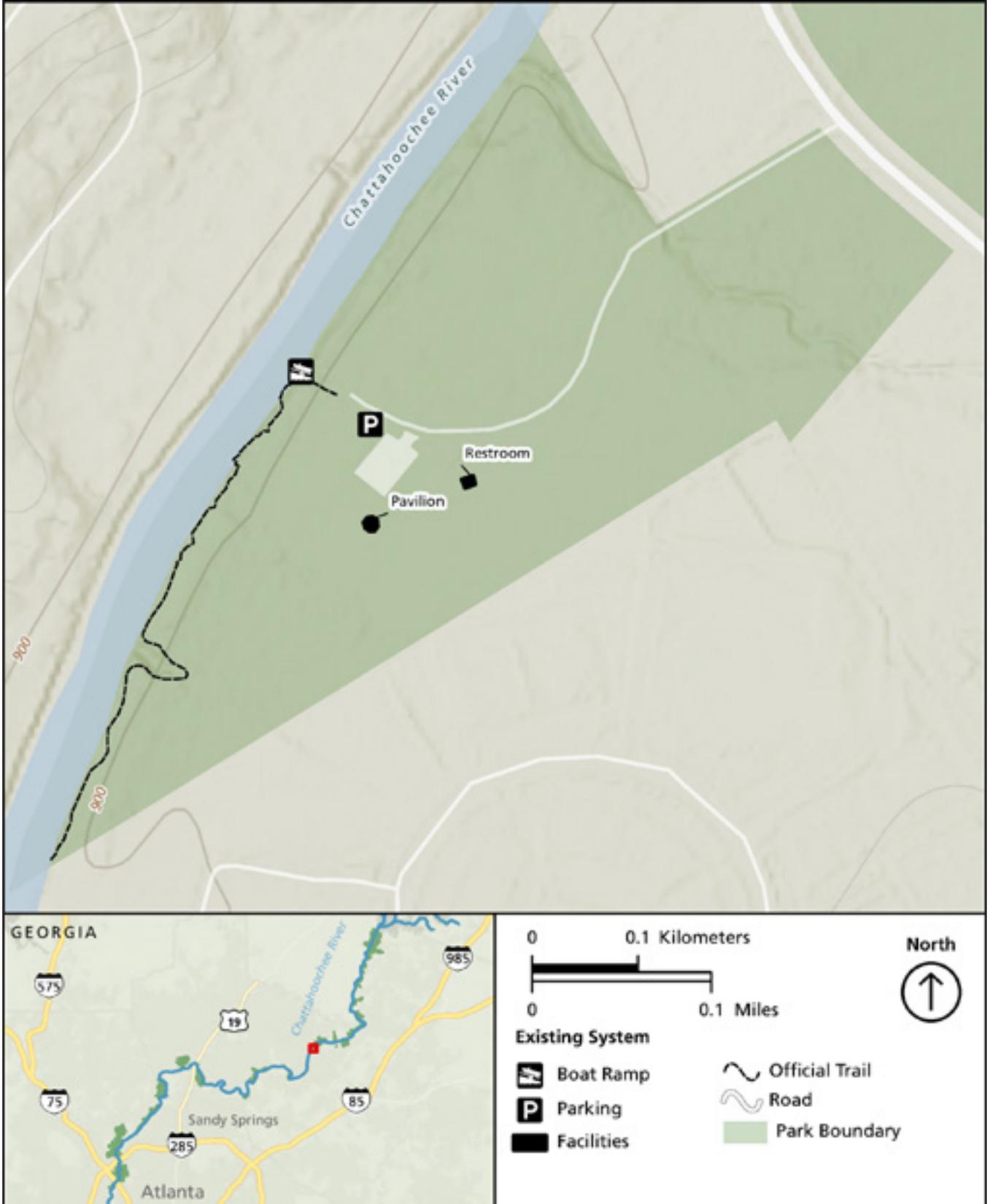


Figure A-9. Existing Trail System – Abbotts Bridge South

Medlock Bridge Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

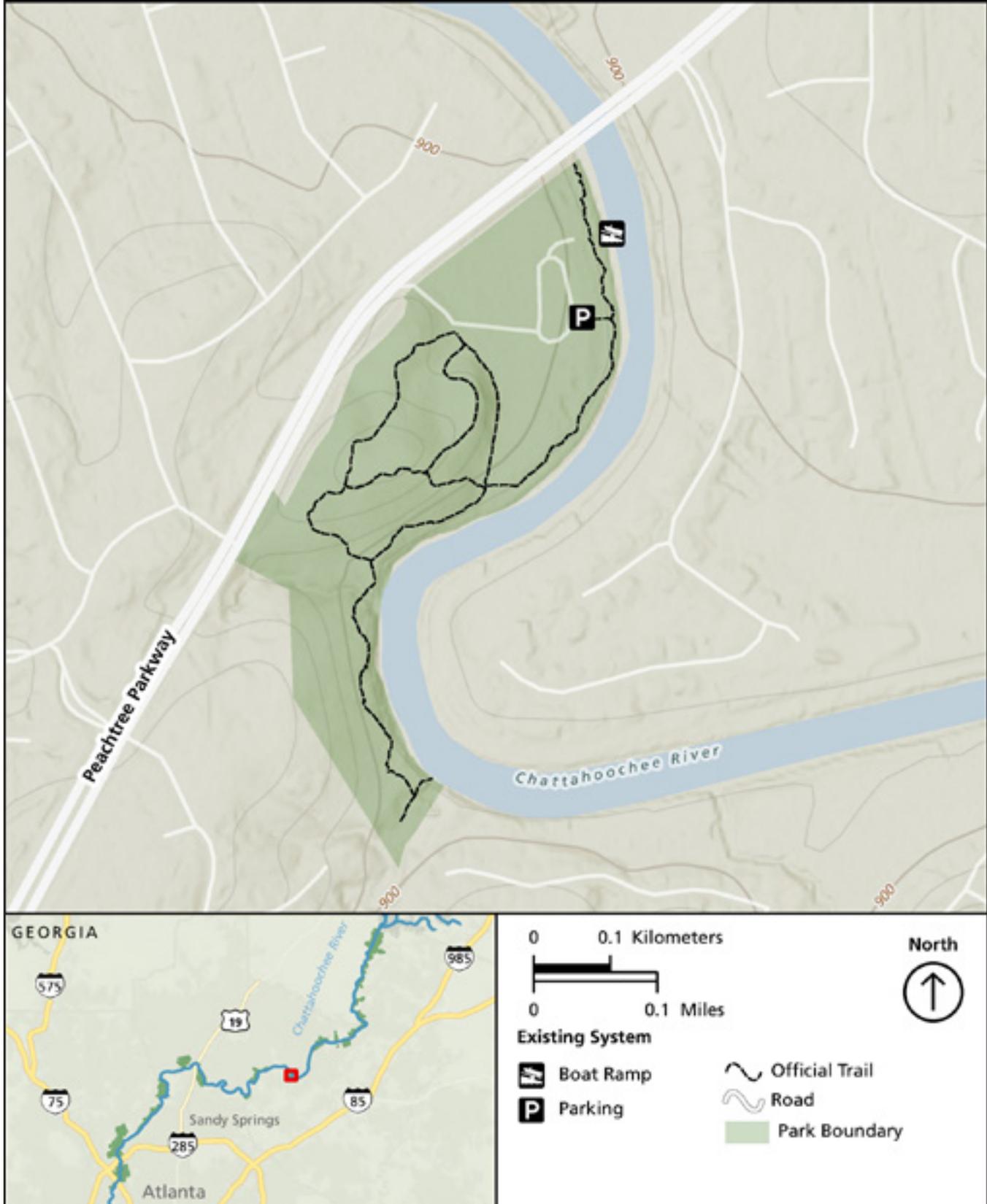


Figure A-10. Existing Trail System – Medlock Bridge

Jones Bridge North

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

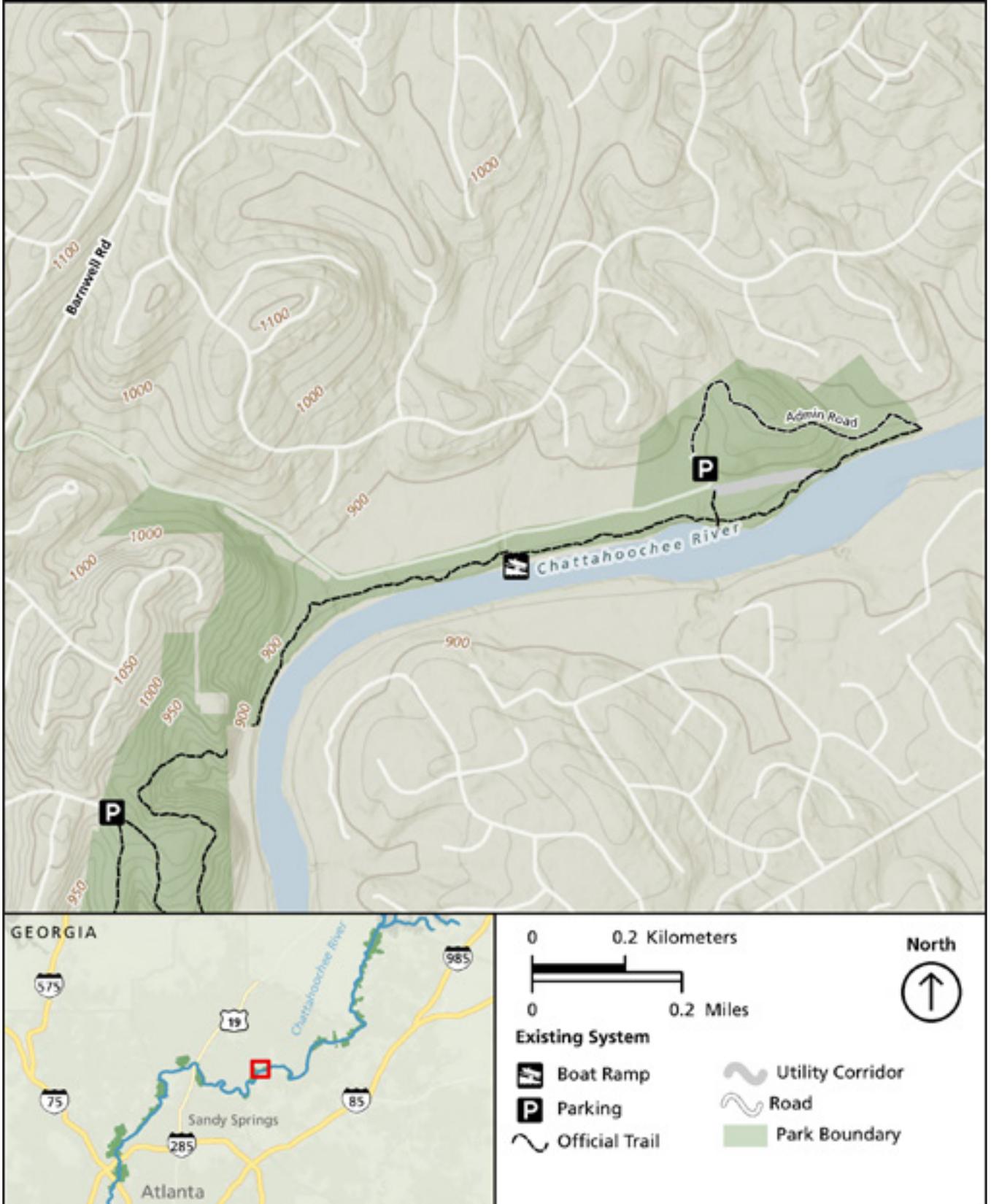


Figure A-11. Existing Trail System – Jones Bridge North

Jones Bridge South

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

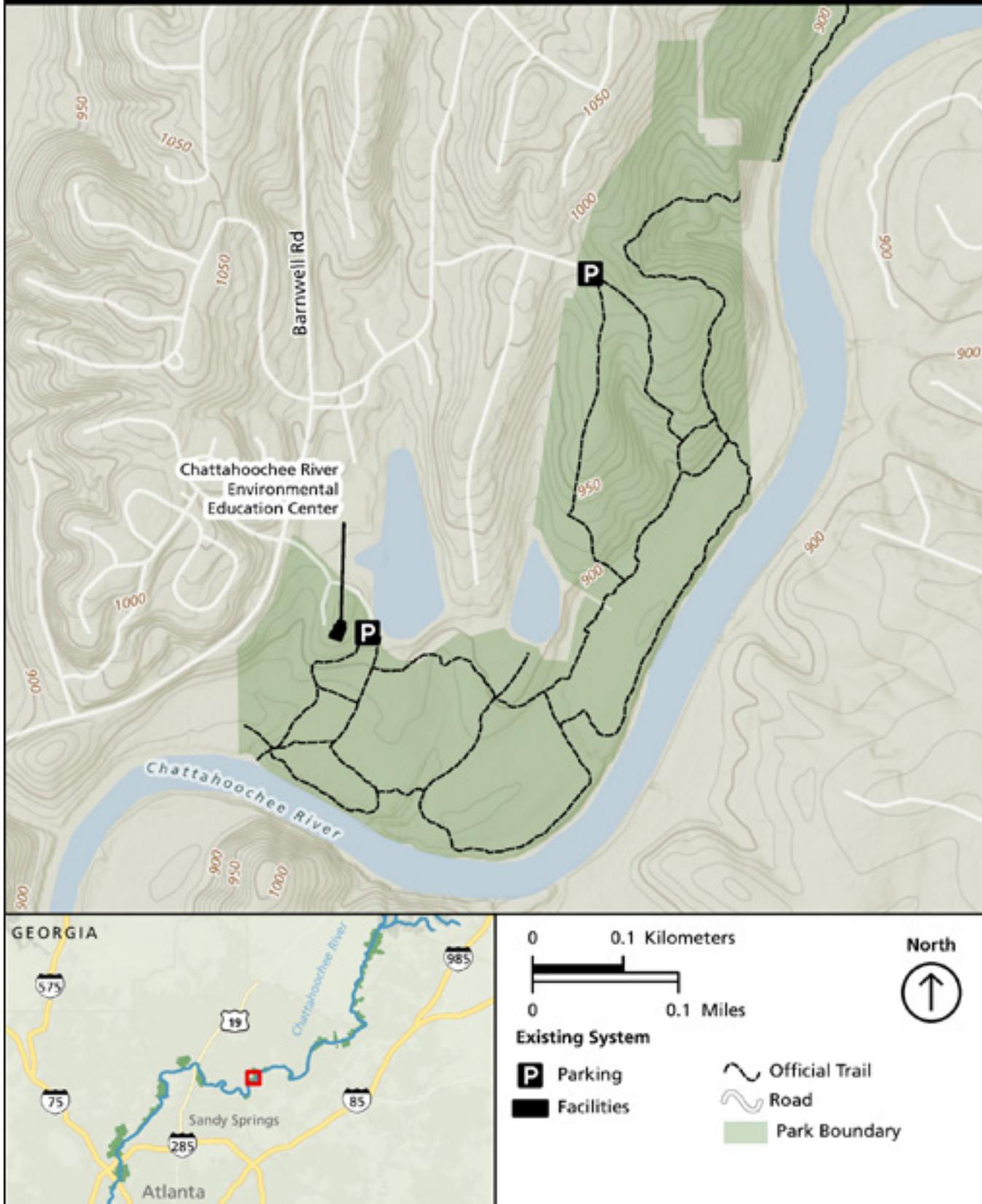


Figure A-12. Existing Trail System – Jones Bridge South

Holcomb Bridge

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

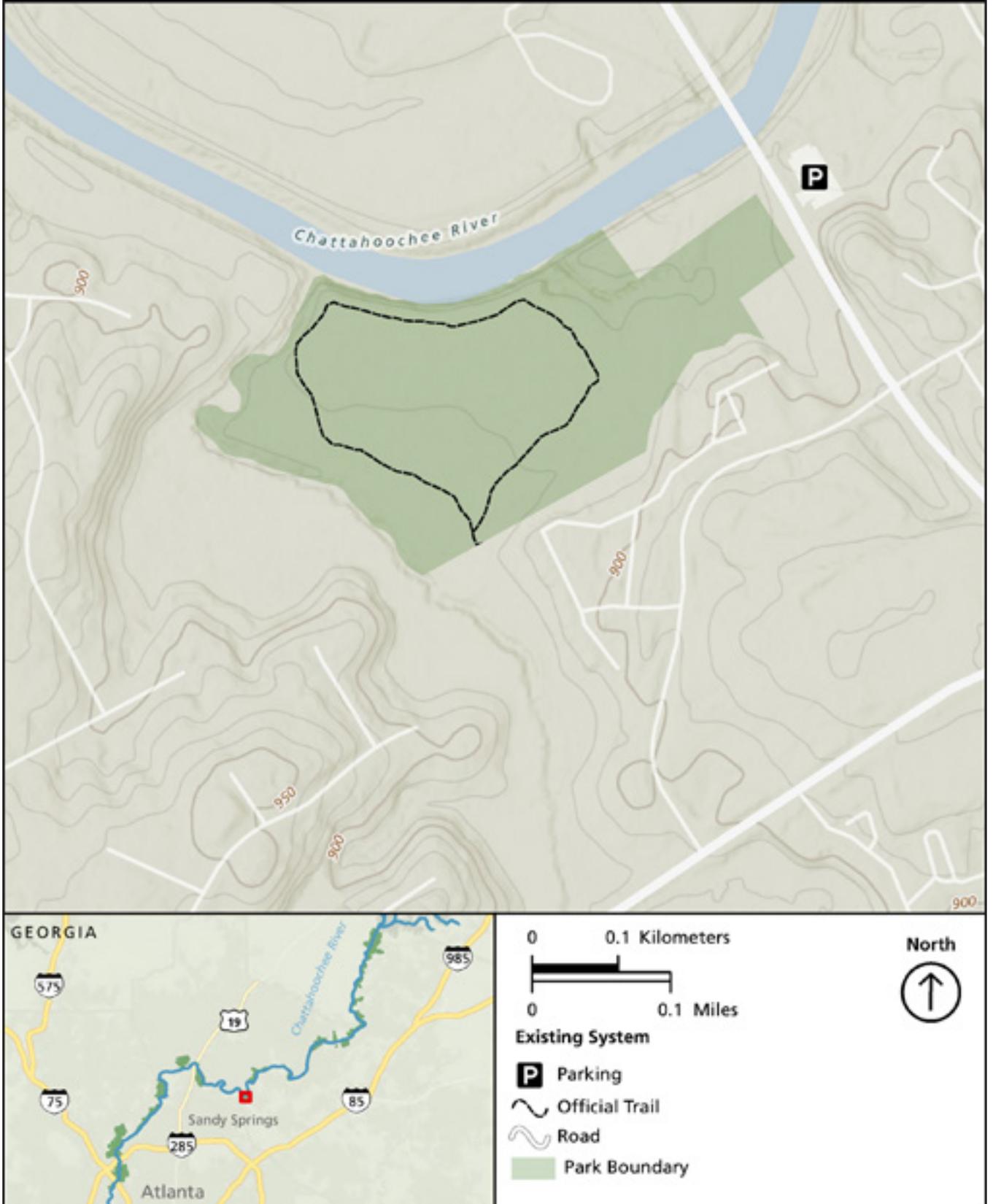


Figure A-13. Existing Trail System – Holcomb Bridge

Island Ford North

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

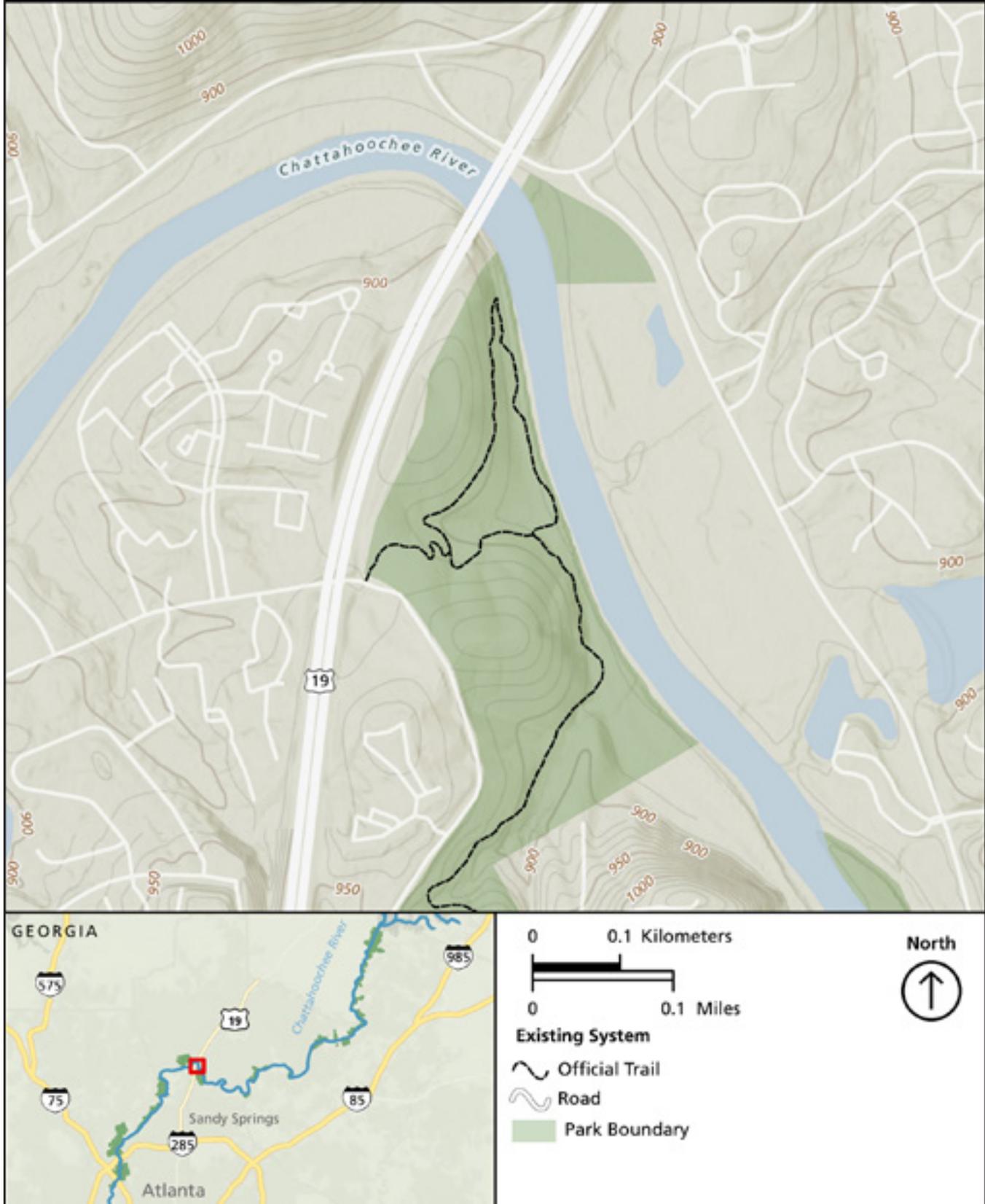


Figure A-14. Existing Trail System – Island Ford North

Island Ford South

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

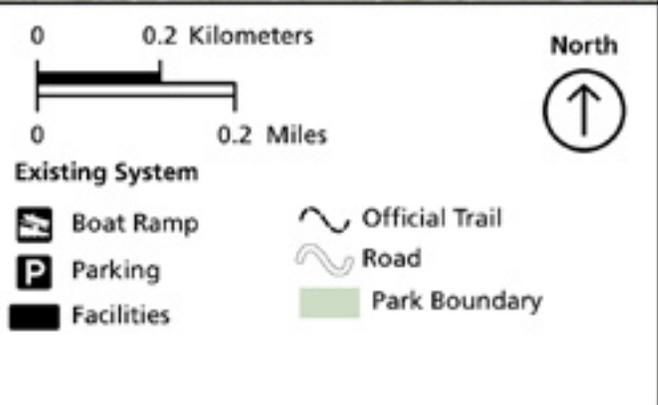
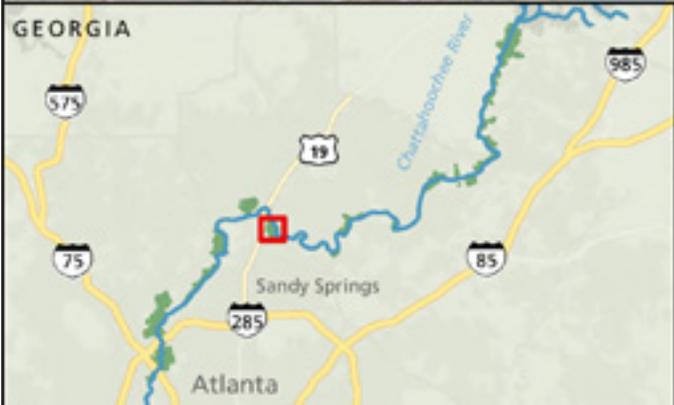
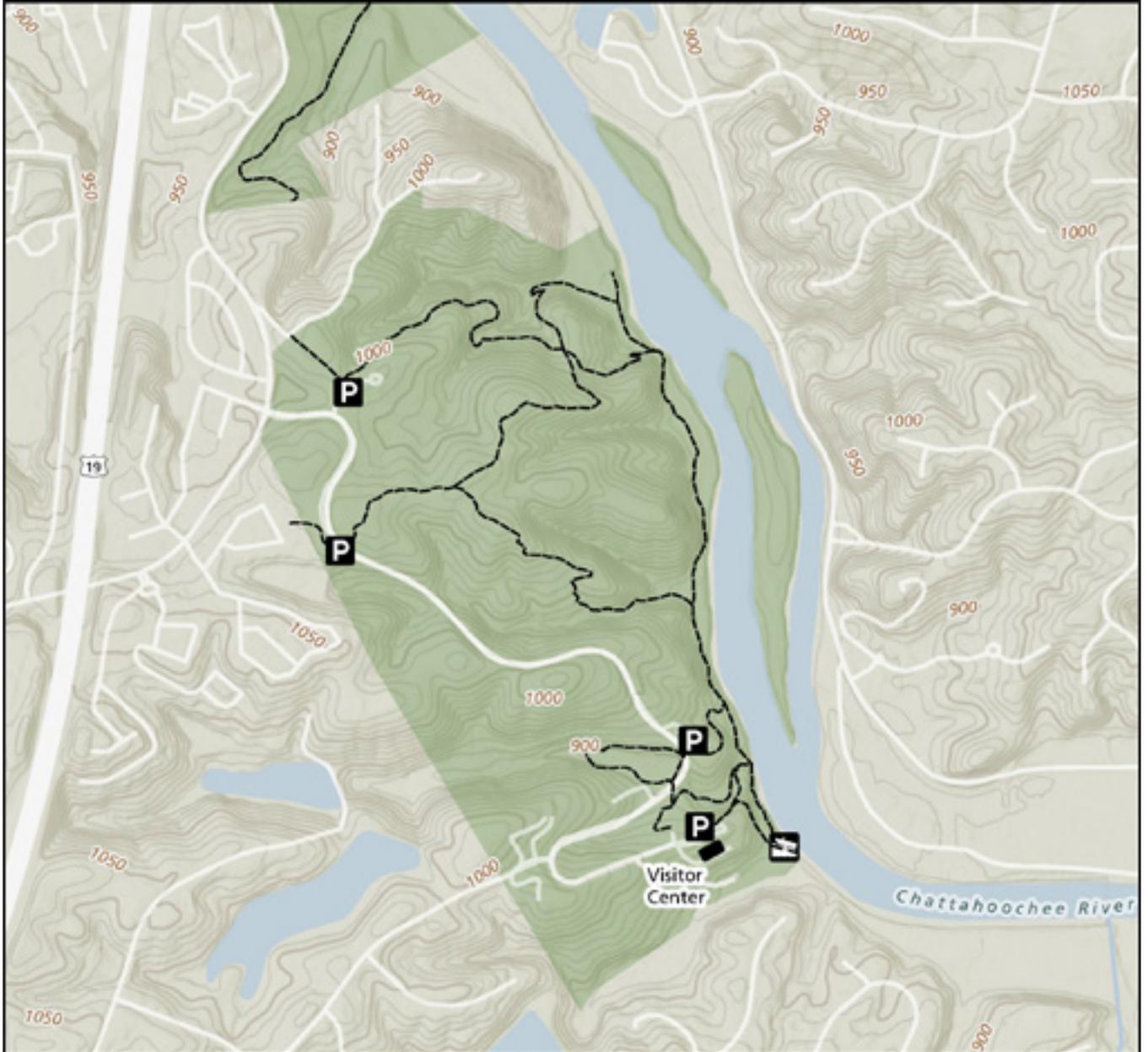


Figure A-15. Existing Trail System – Island Ford South

Vickery Creek
 Chattahoochee River National Recreation Area, GA

National Park Service
 U.S. Department of the Interior

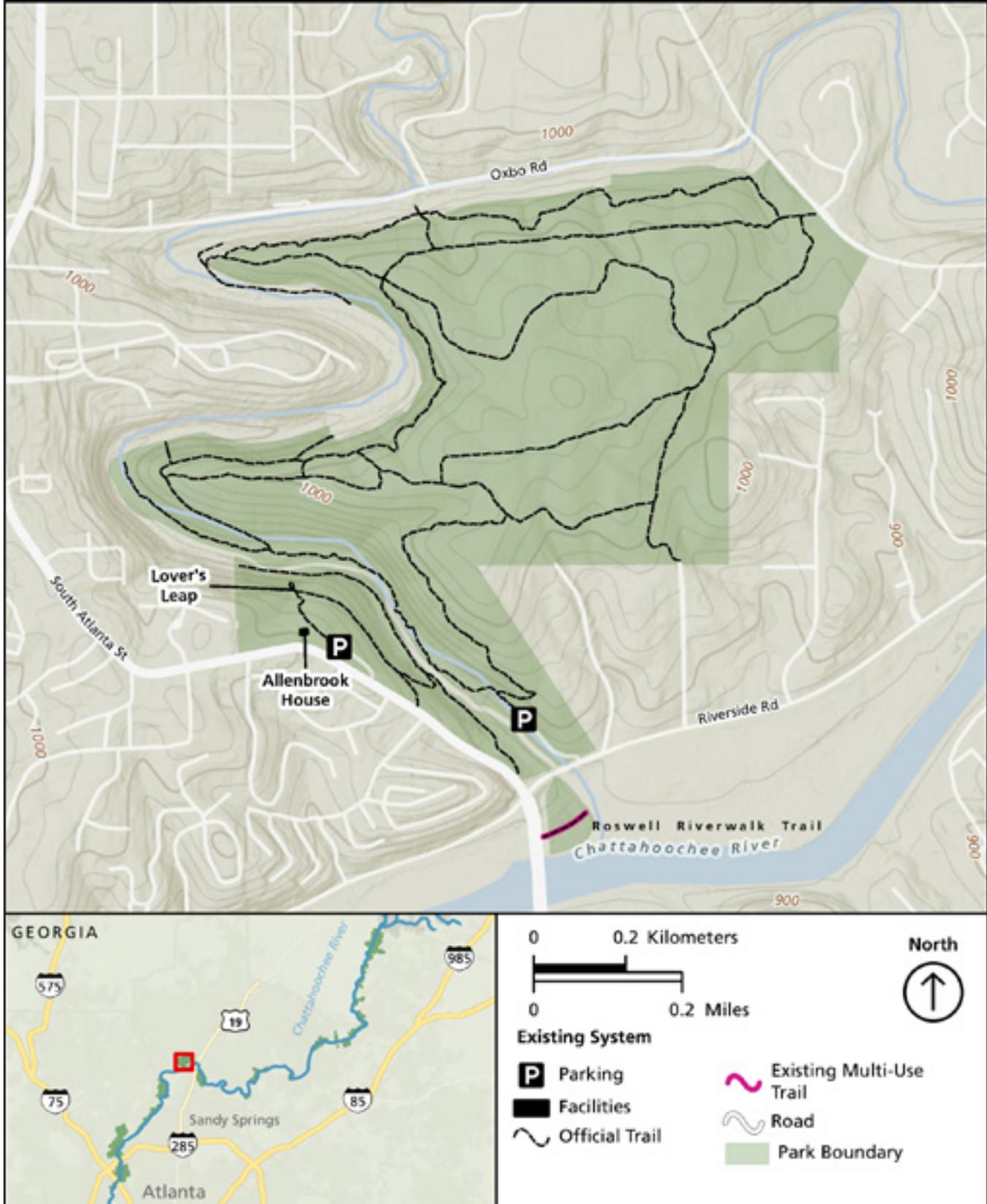


Figure A-16. Existing Trail System – Vickery Creek

Gold Branch Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

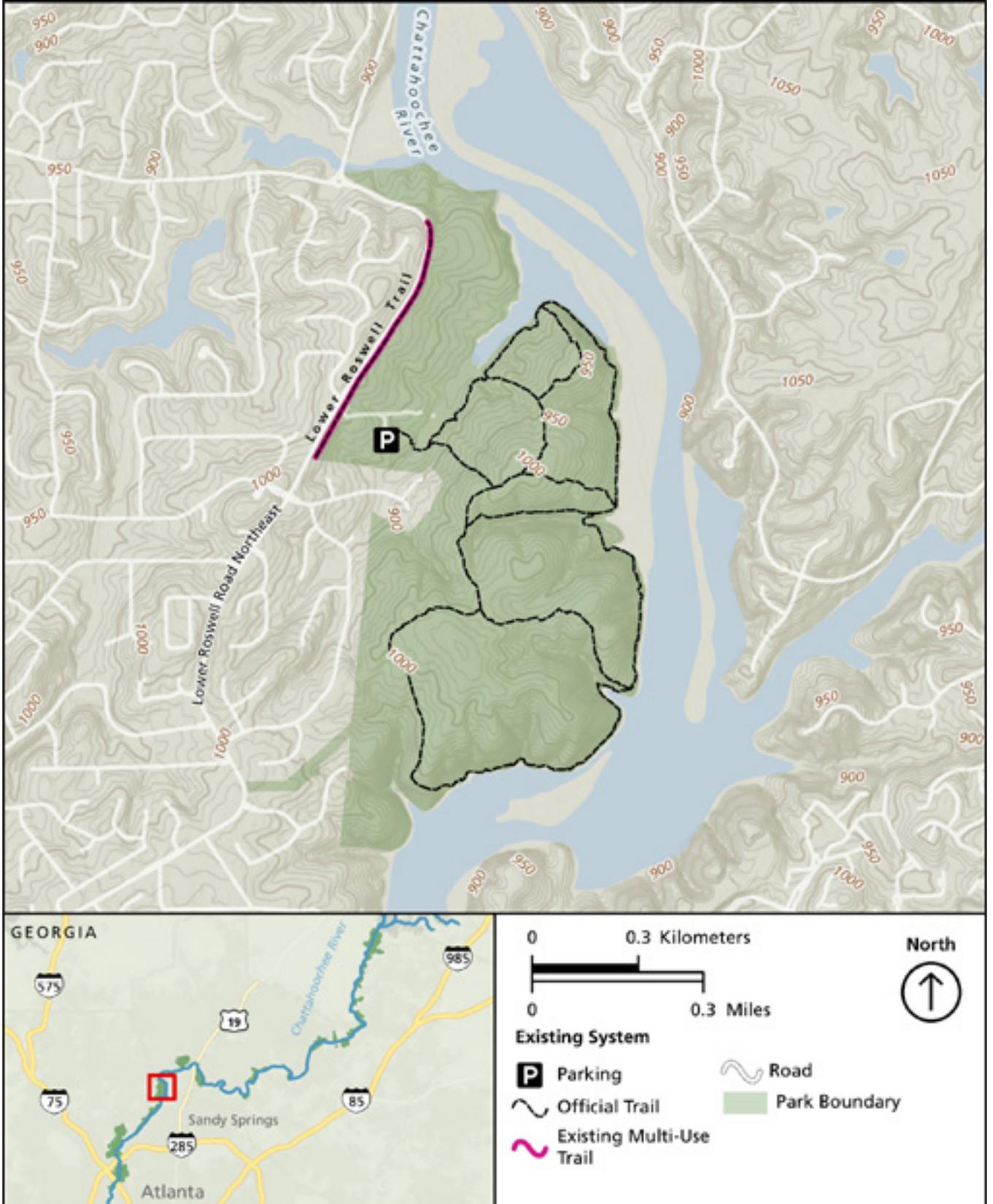


Figure A-17. Existing Trail System – Gold Branch

Johnson Ferry South

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

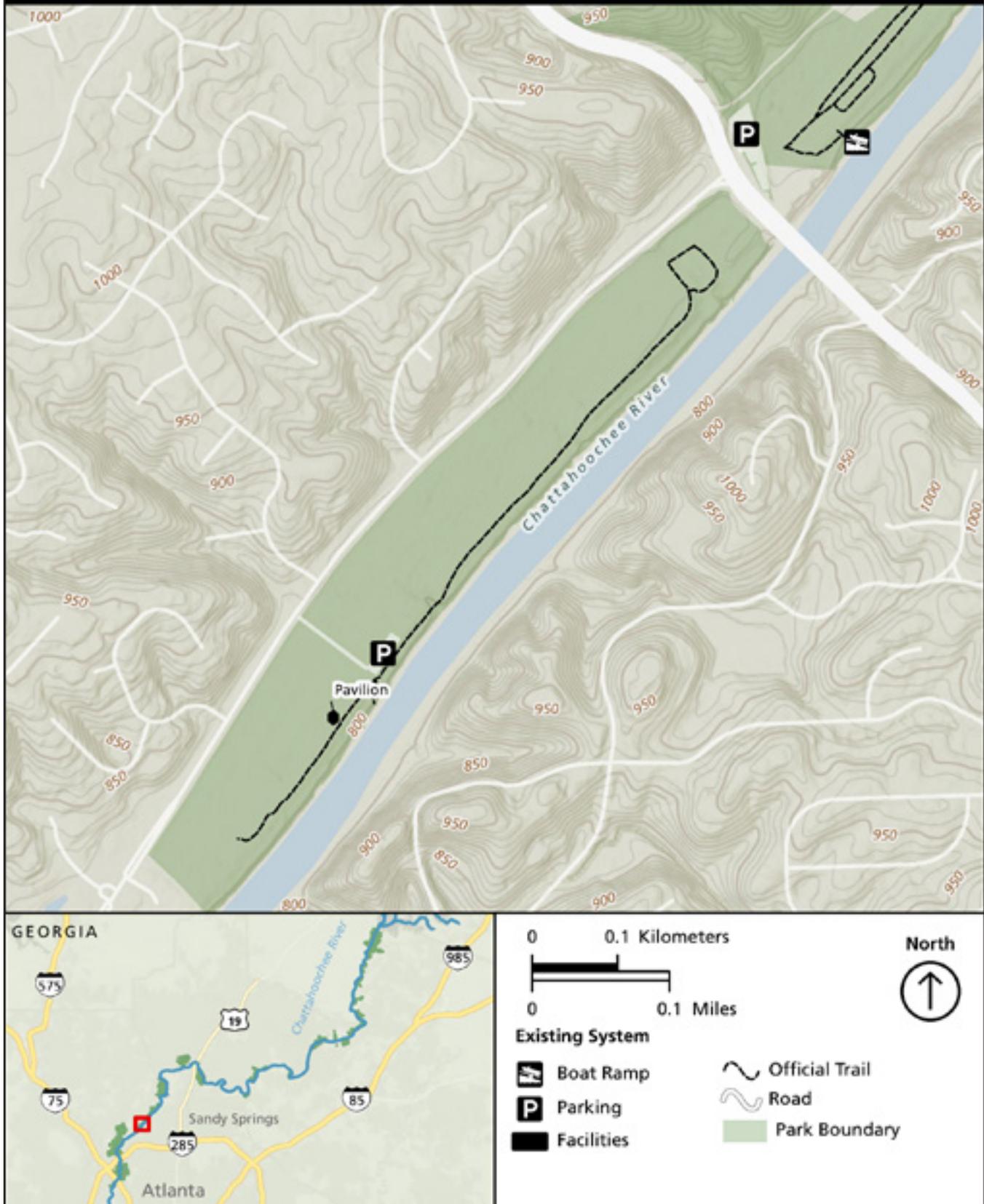


Figure A-18. Existing Trail System – Johnson Ferry South

Cochran Shoals - Sope Creek Trailhead

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

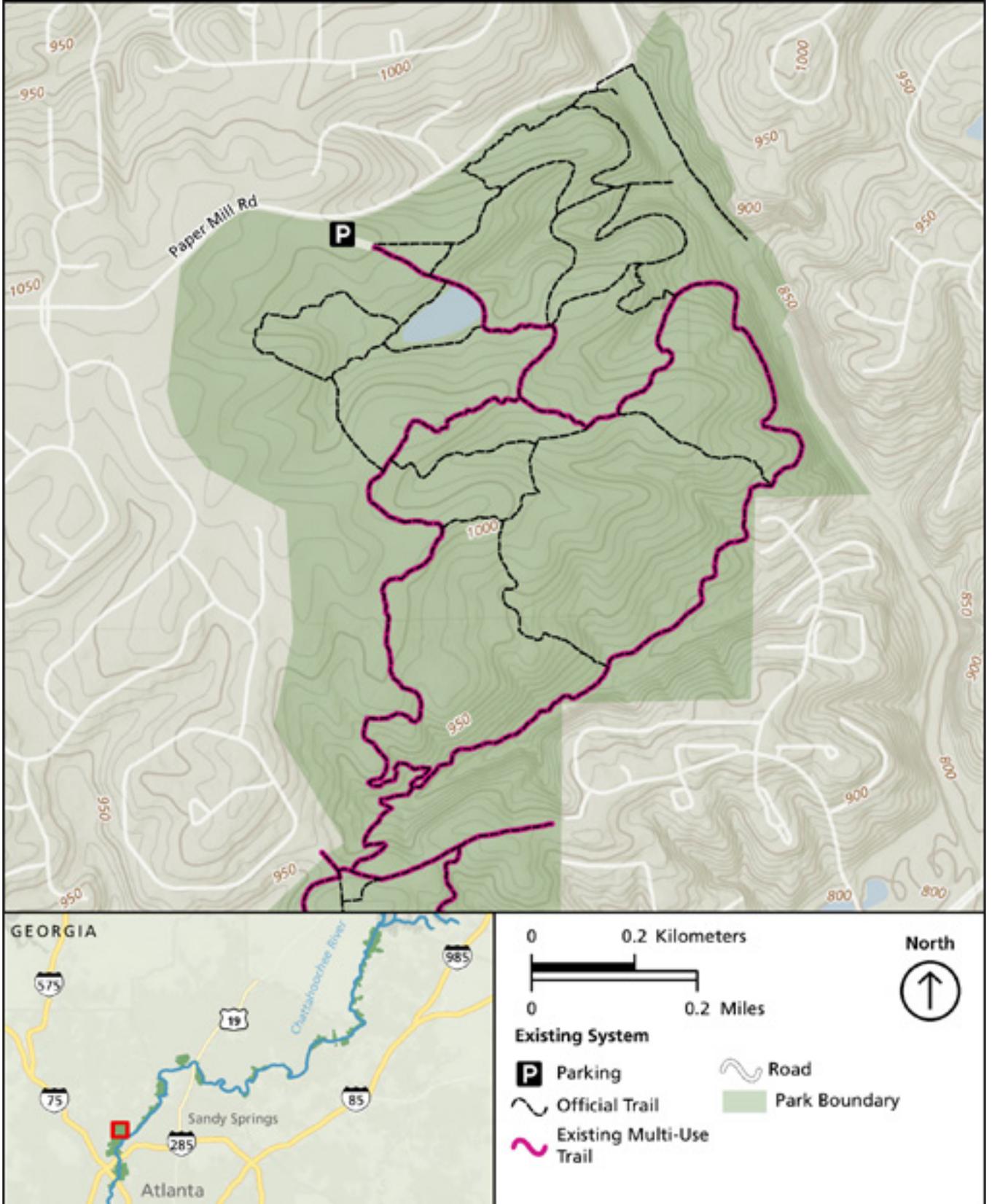


Figure A-19. Existing Trail System – Cochran Shoals, Sope Creek Trailhead

Cochran Shoals - Columns Drive Trailhead

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

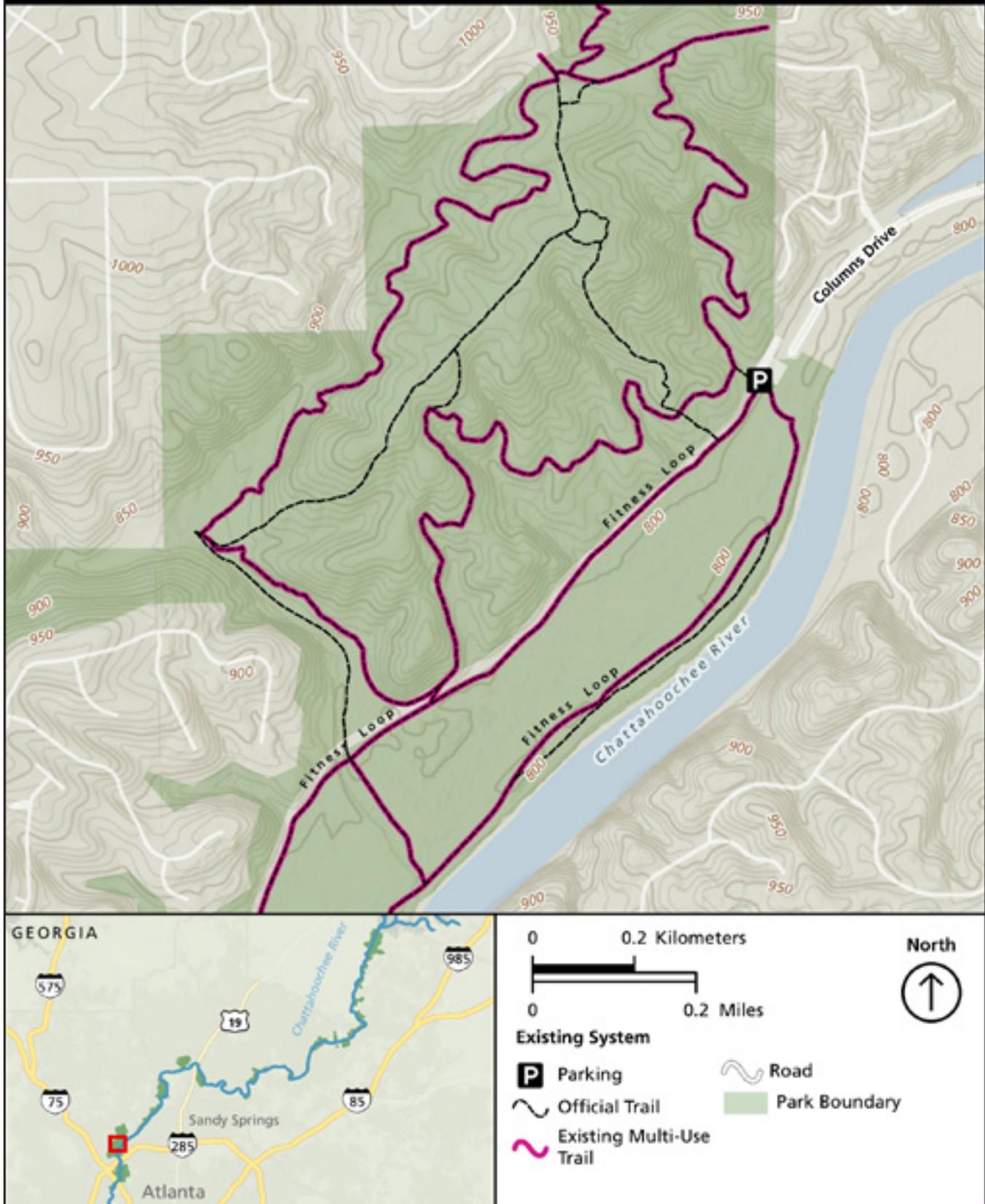


Figure A-20. Existing Trail System – Cochran Shoals, Columns Drive Trailhead

Cochran Shoals - Interstate N/Powers Island

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

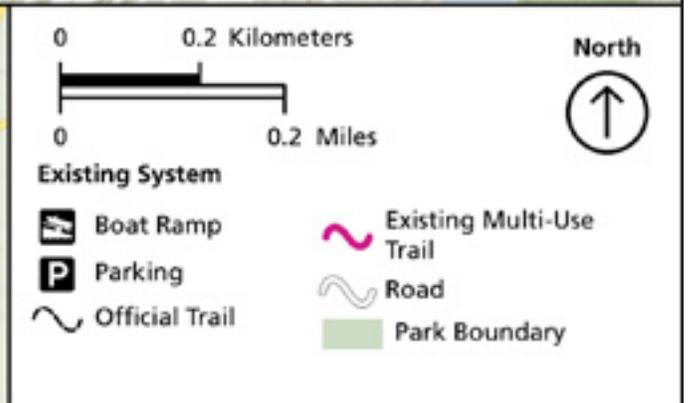
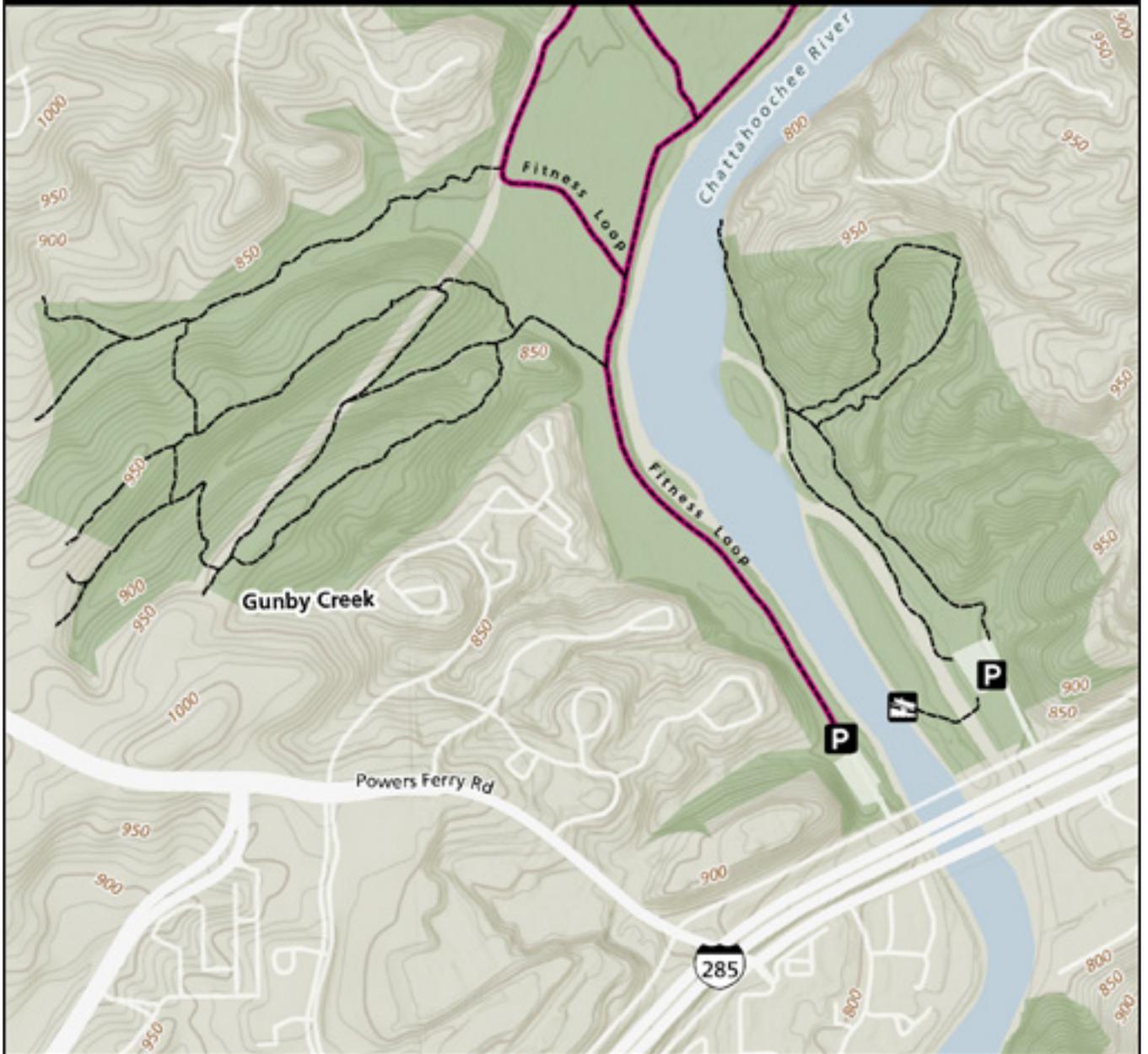


Figure A-21. Existing Trail System – Cochran Shoals, Interstate North/Powers Island

Palisades North
 Chattahoochee River National Recreation Area, GA

National Park Service
 U.S. Department of the Interior

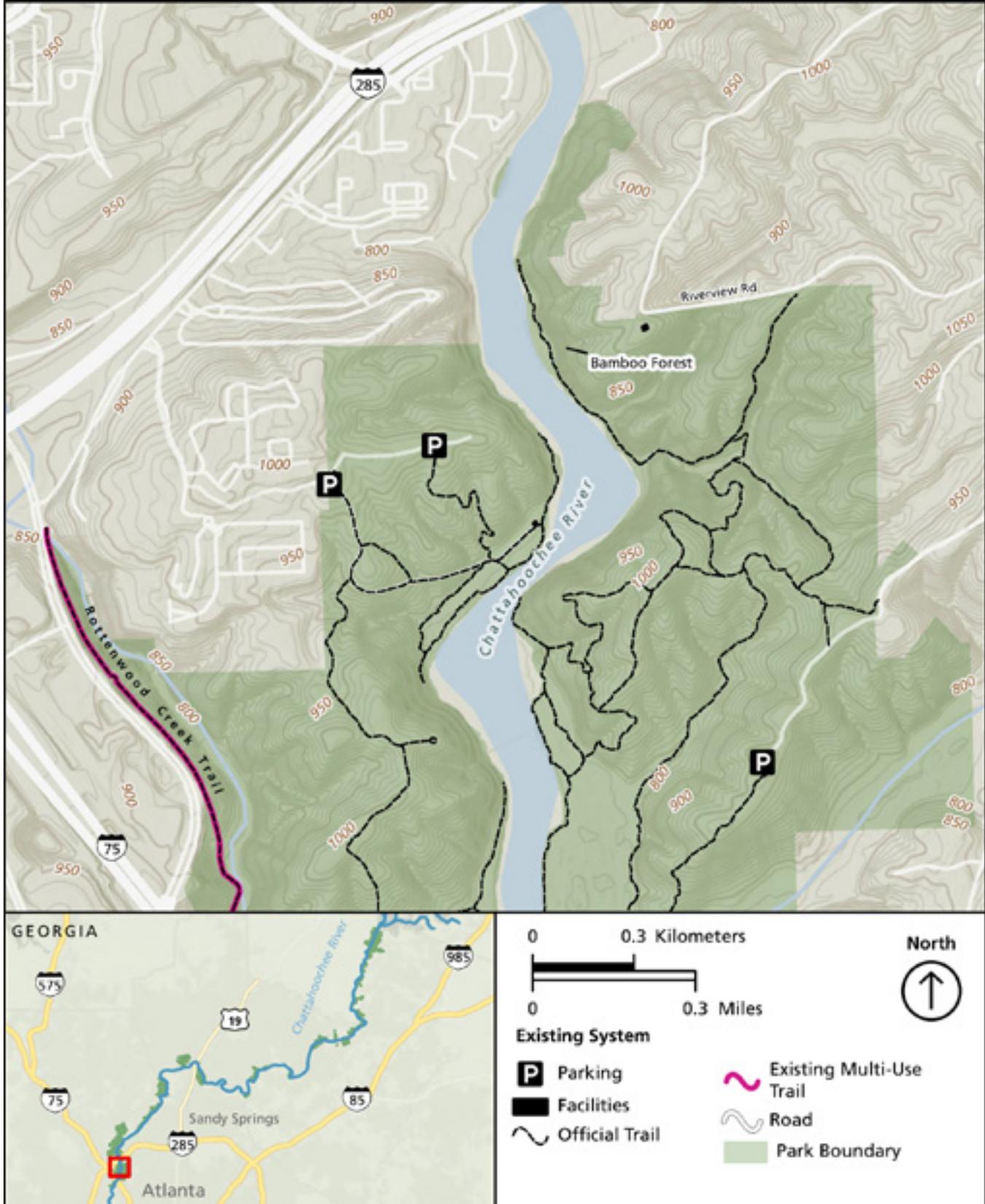


Figure A-22. Existing Trail System – Palisades North

Palisades South

Chattahoochee River National Recreation Area, GA

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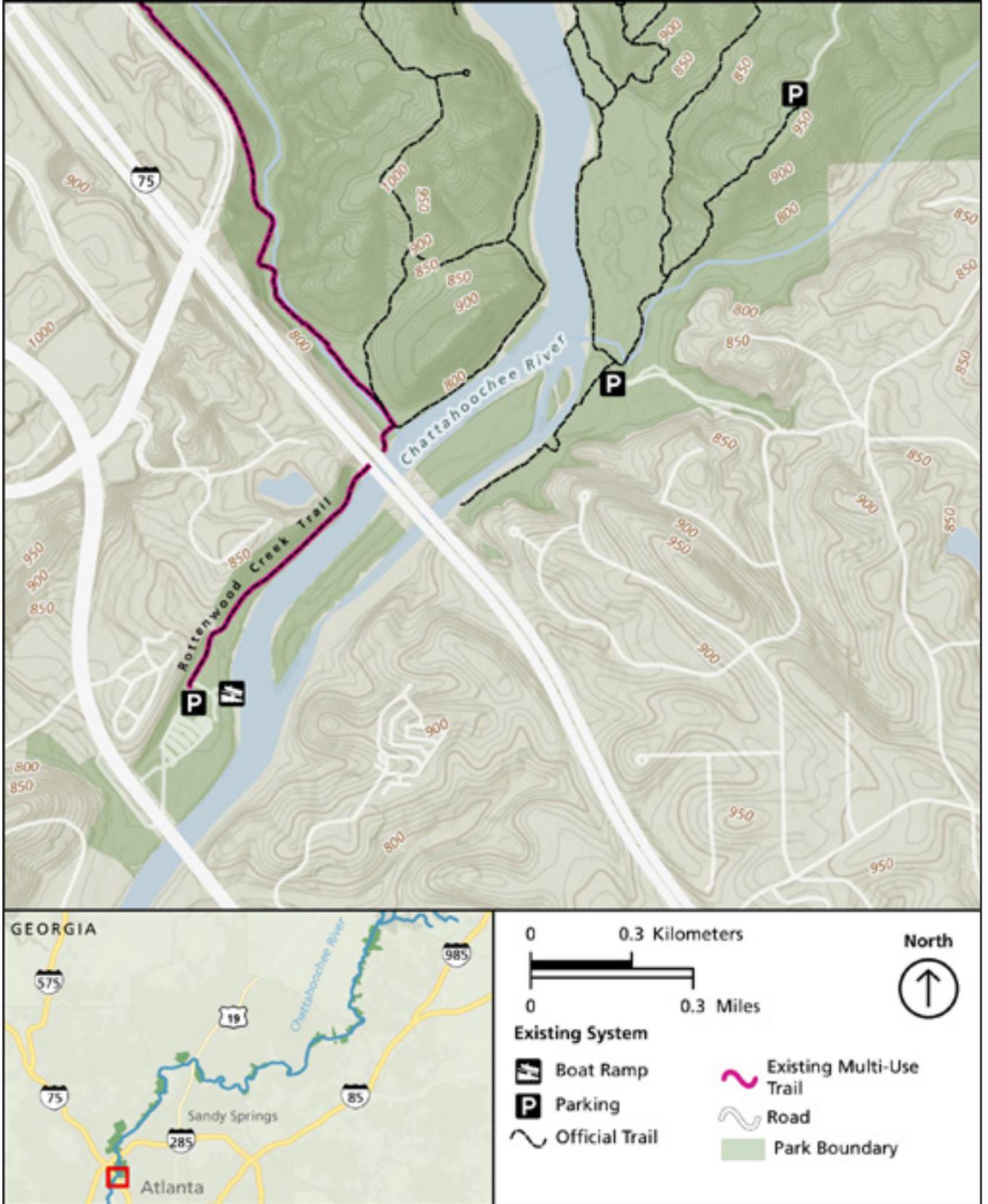


Figure A-23. Existing Trail System – Palisades South

Appendix B: Alternative 2 (NPS Preferred) Actions, Visitor Capacity Management Strategies, and Resultant Trail System

Bowmans Island

Near-Term Actions:

- Assess and relocate bridges.
- Construct water management structures (grade reversals) on trails that would be maintained in the system.

Mid-Term Actions:

- Construct a hardened riverside trail on the west bank to form the core of the trail system. This trail would be predominately located on historic floodplain levees and include four structures that access major pools and fishing locations, serve as river launches, and provide views of the river. The riverside trail and structures would be built to be widely accessible and would be armored to protect from high river flows. Much of the riverside trail could be boardwalk. To retain a sense of adventure, a set of rock steps would connect the floodplain trail to the upland trails near a steep rock face and bouldering location.
- Restore unsustainable trails and provide improved, contour-aligned routes that provide longer loop opportunities.
- Designate and develop appropriate primary and secondary trail access points.
- Improve primary trail access point at Trout Place Road. Explore partnership opportunities with the Georgia Department of Natural Resources to improve signage around the fish hatchery about available parking, as well the possibility of increasing the number of designated parking spots on fish hatchery land available to trail users.

Long-Term Actions:

- Develop a multiloop trail network on the portion of the unit east of the river to reduce use pressure on the west side trails. The new network would be integrated with trails on the west side of the unit and a designated trailhead would be constructed south of Highway 20/Cumming Highway (and would connect with the trail system via an underpass). This trailhead would lead to an improved river access or anglers' access trail, which would include raised tread maintenance and minor relocation onto adjacent levees. Attempting to make a loop with this dead-end trail would be discouraged. An additional trail connection would be completed to Gary Pirkle Park.

Visitor Capacity Management Strategies:

West:

- Install maps and signage about various destinations in this unit.
- Educate park visitors about the new opportunities in this unit, especially for those who may be seeking a quieter, more tranquil area of the park where they can encounter fewer people.
- Promote this unit to increase use through social media, interpretation, local news outlets, and at local attractions (i.e., Cummings, Duluth, Lake Lanier).
- Explore potential parking opportunities to reduce pressure on available parking. Opportunities include at the ranger station; along highway 20; coordinating parking with the neighboring Army Corps of Engineers; or at the trout hatchery through partnership.
- Install an NPS sign adjacent to the Corps sign to increase awareness of entering an NPS unit.

East:

- Install maps and signage about various destinations in both units.
 - Educate park visitors about the new opportunities in these units, especially for those who may be seeking a quieter, more tranquil area of the park where they can encounter fewer people.
- Develop additional parking on park-owned property south of Highway 20.
 - Increase education and signage about parking in designated areas.
 - Increase education and information during peak times about where to find available parking.

Bowmans Island

Chattahoochee River National Recreation Area, GA

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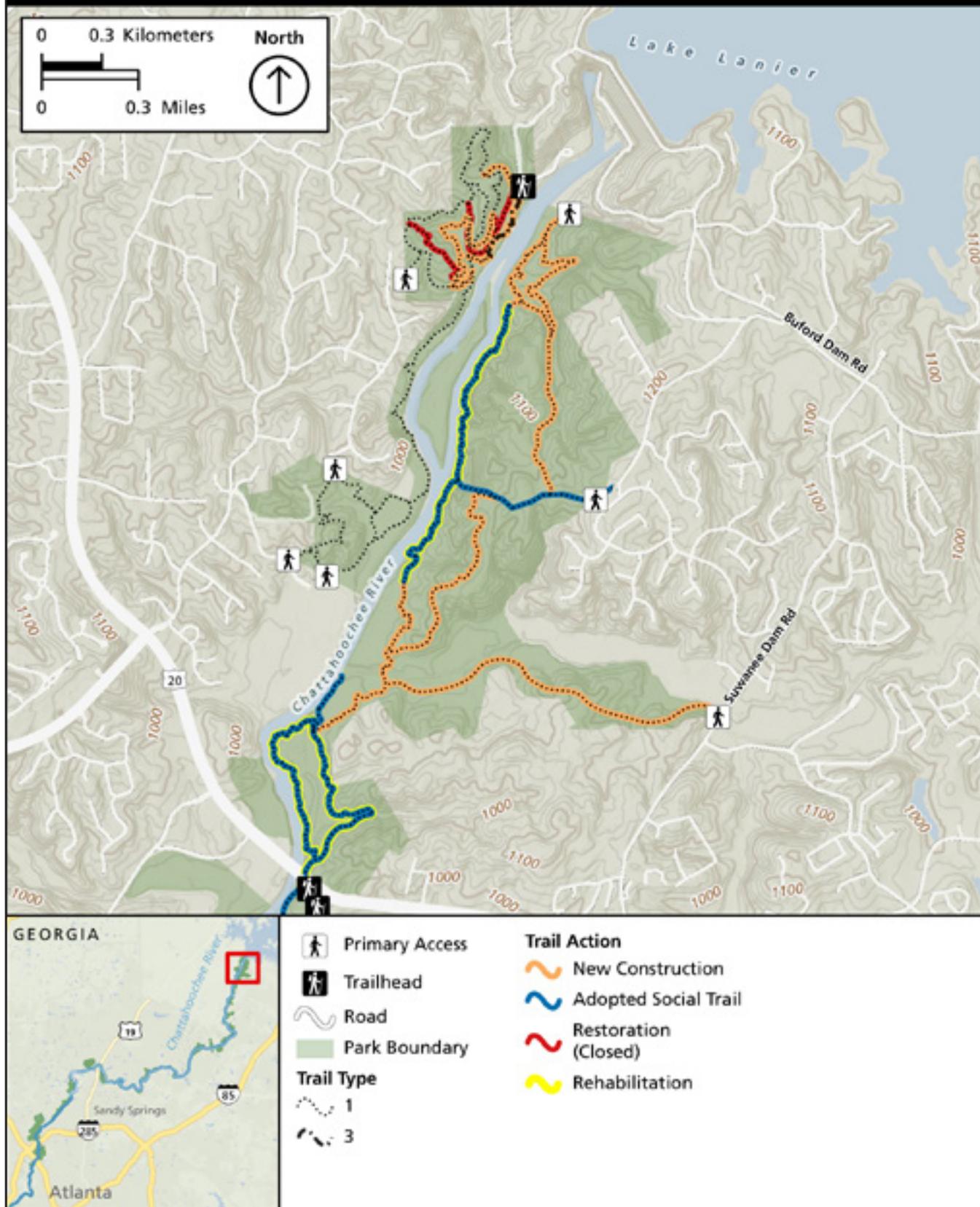


Figure B-1. Actions Associated with Alternative 2 – Bowmans Island

Bowmans Island

Chattahoochee River National Recreation Area, GA

National Park Service
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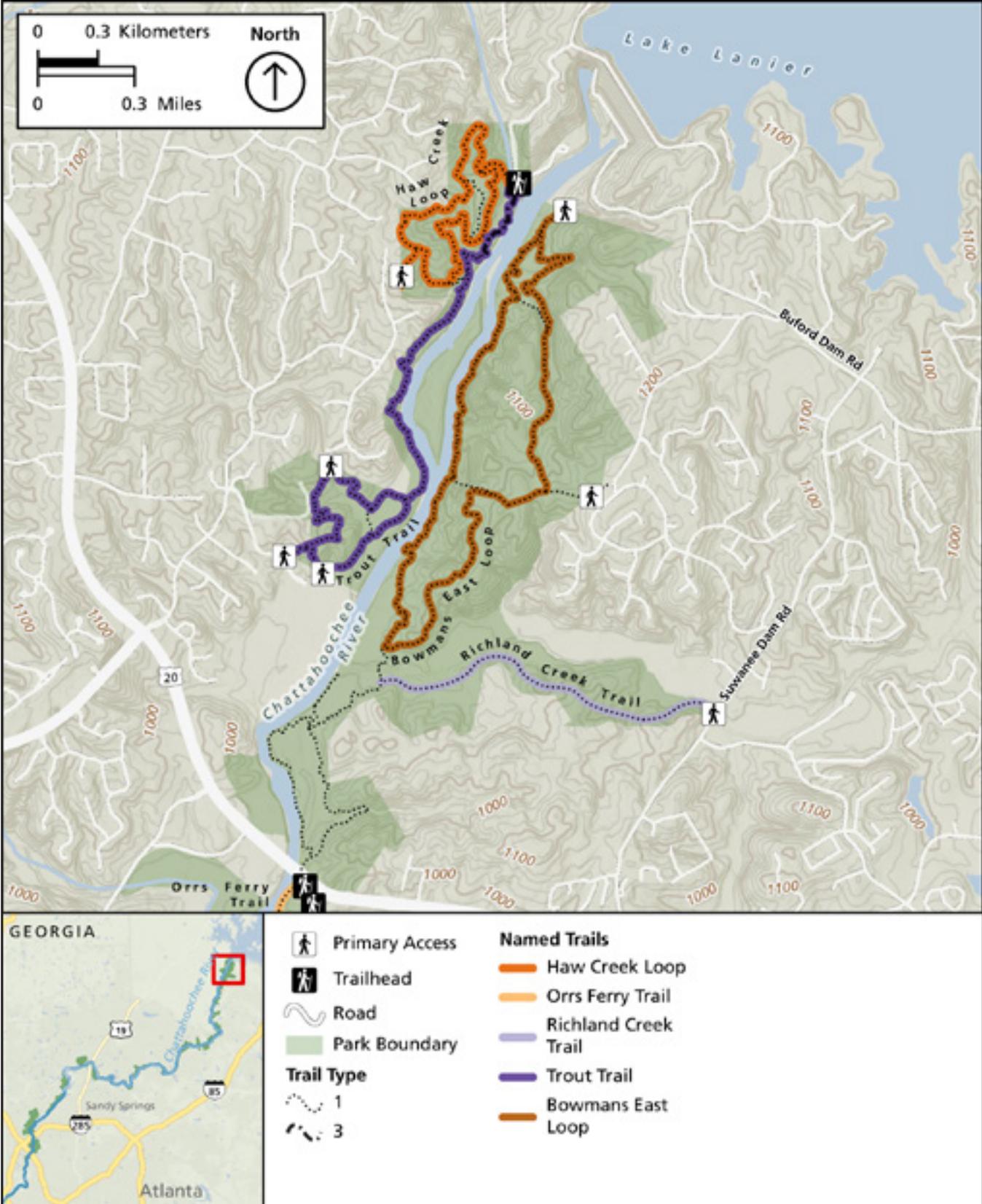


Figure B-2. Resultant Trail System, Alternative 2 – Bowman's Island

Bowmans North Detail

Chattahoochee River National Recreation Area, GA

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Figure B-3. Actions Associated with Alternative 2 – Bowmans Island North

Orrs Ferry

Near-Term Actions:

- Remove outdated trail access point signage.
- Develop interpretive media and NPS mobile app information to educate visitors about the purpose of river buffer protections, the ongoing riparian rehabilitation at Crayfish Creek, and sensitive plant species in this unit.
- Increase signage in this unit delineating NPS property from adjacent residential areas and landowners.
- Construct wayfinding signage at the main trailhead directing visitors to the Orrs Ferry trails or to the adjacent trails in Bowmans Island – East (extending under the Highway 20 Bridge).

Mid-Term Actions:

- Construct a modest natural surface trail system to access the river and Crayfish Creek area from the new trailhead on Highway 20/Cumming Highway (described under Bowmans Island above).
- Construct footbridges at stream crossings to prevent streambank erosion.
- Formalize angling trails and develop signage indicating angling access to river shoals conducive to recreational fishing.
- Partner with the Georgia Department of Natural Resources, Gwinnett County, and City of Sugar Hill to ensure adequate emergency and law enforcement access to the trail system.

Long-Term Actions:

- Explore trail access and connectivity in future site planning for NPS property along Highway 20.
- Restore social trails (not formalized in this plan) to natural conditions.
- Collaborate with the City of Sugar Hill to explore greater connectivity to future segments of the Sugar Hill Greenway.

Visitor Capacity Management Strategies:

- Educate park visitors about the new opportunities in this unit, especially for those who may be seeking a quieter, more tranquil area of the park where they can encounter fewer people.
- Develop additional parking on park-owned property south of Highway 20.
- Increase education and signage about parking in designated areas.
- Increase education and information during peak times about where to find available parking.

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Orrs Ferry Chattahoochee River National Recreation Area, GA

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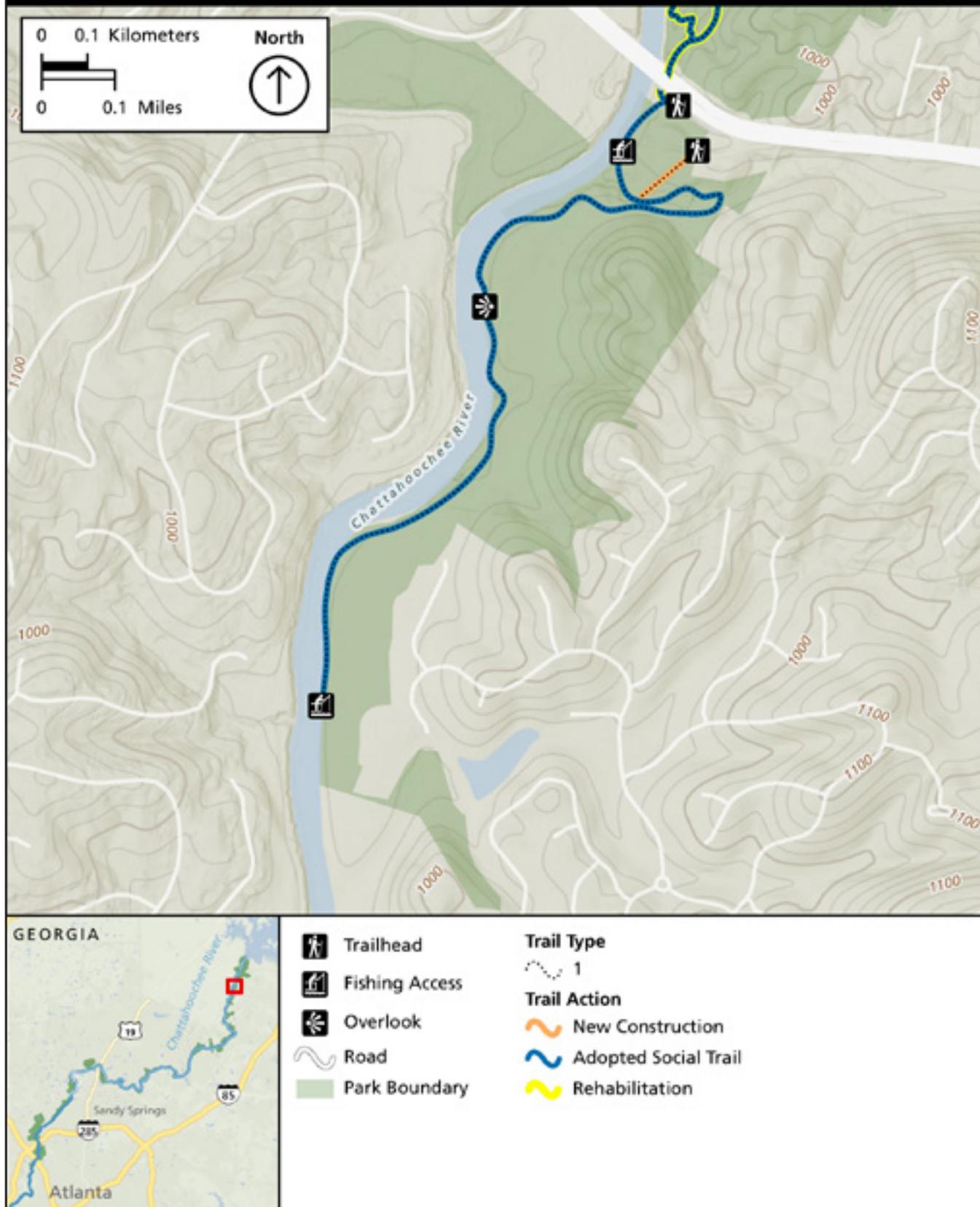
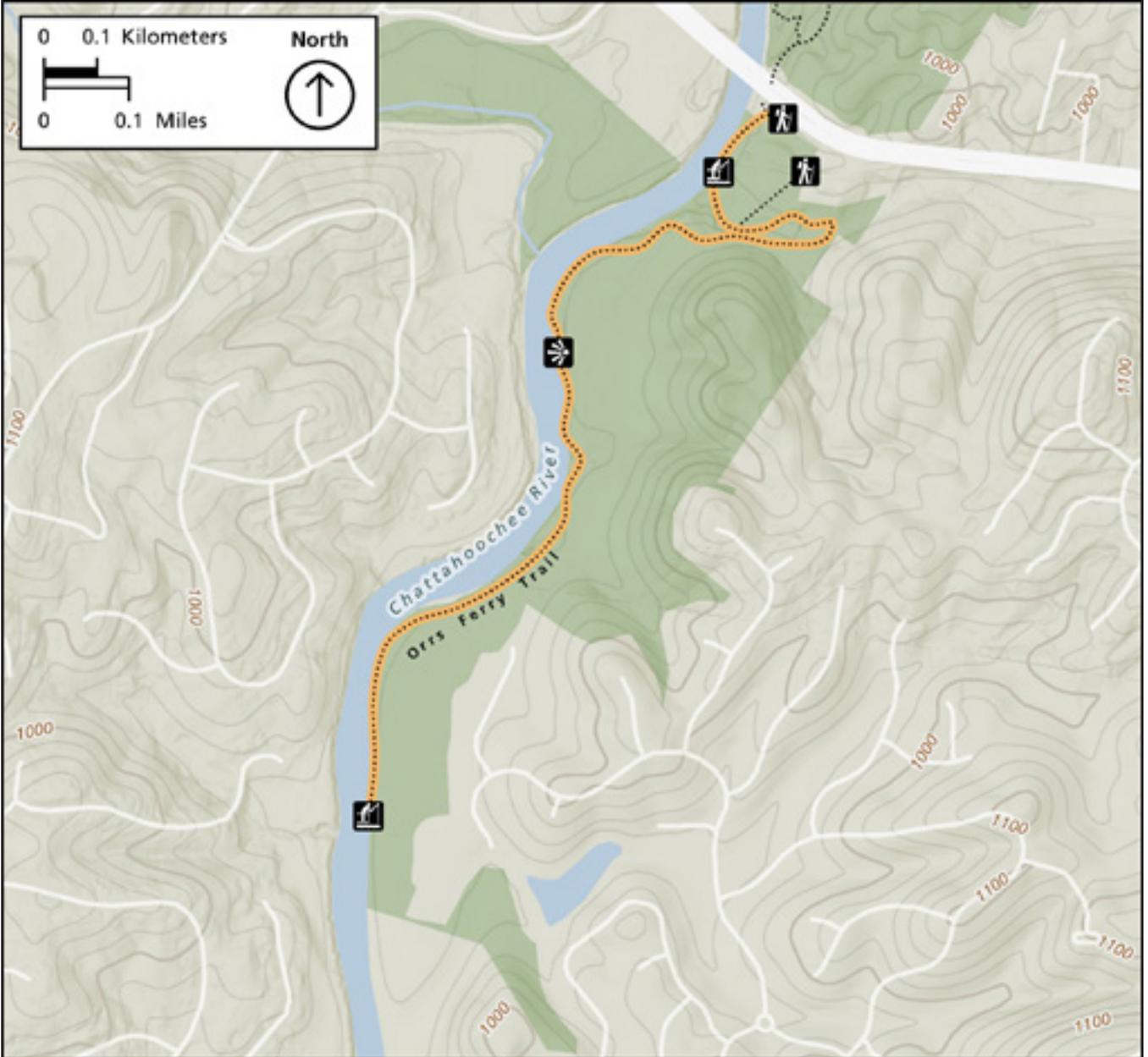


Figure B-5. Actions Associated with Alternative 2 – Orrs Ferry

Orrs Ferry Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior



- | | | | |
|--|----------------|--|----------------------------------|
| | Trailhead | | Park Boundary |
| | Fishing Access | | Trail Type
1 |
| | Overlook | | Named Trails
Orrs Ferry Trail |
| | Road | | |

Figure B-6. Resultant Trail System, Alternative 2 – Orrs Ferry

Settles Bridge

Near-Term Actions:

- Explore partnership opportunities with Gwinnett County to improve trail connectivity and explore potentially sharing maintenance responsibilities.

Mid-Term Actions:

- In the northern portion of Settles Bridge, restore unsustainable trails and provide improved, gently sloping routes that provide trail-based opportunities. These trails would establish connectivity to Settles Bridge Park and improve the overall navigability of the trail system.
- Designate and develop appropriate primary and secondary trail access points. Work with Gwinnett County to ensure that the Settles Bridge Park Trailhead signage references the trail's connection to Chattahoochee River National Recreation Area.
- Connect to the potential greenway as appropriate. If constructed, the greenway would follow the existing utility corridor south after entering the unit via the access road. The greenway would then continue further south along the river before crossing near Level Creek.

Long-Term Actions:

- At the southern end of this unit, restore unsustainable, unauthorized, user-created trails that travel through wet bottomland areas and provide an improved, gently sloping loop route.

Visitor Capacity Management Strategies:

- Partner with Gwinnett County to encourage connectivity between the county's Settles Bridge Park and the NPS Settles Bridge unit. This strategy includes physical connectivity as well as integration of signage and wayfinding devices.
- Formalize parking spaces in the lot to increase parking efficiency and discourage unauthorized activities.
- Explore increasing the size of the Settles Bridge parking lot and improving circulation within the parking lot.
- Explore moving the Settles Bridge parking lot further away from the river.
- Improve drainage in the Settles Bridge parking lot to improve ease of access to trails.
- Increase the law enforcement presence on peak use days to address unauthorized activities occurring in the Settles Bridge parking lot. Partner with the Gwinnett County Police Department to increase multiagency presence.

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Settles Bridge

Chattahoochee River National Recreation Area, GA

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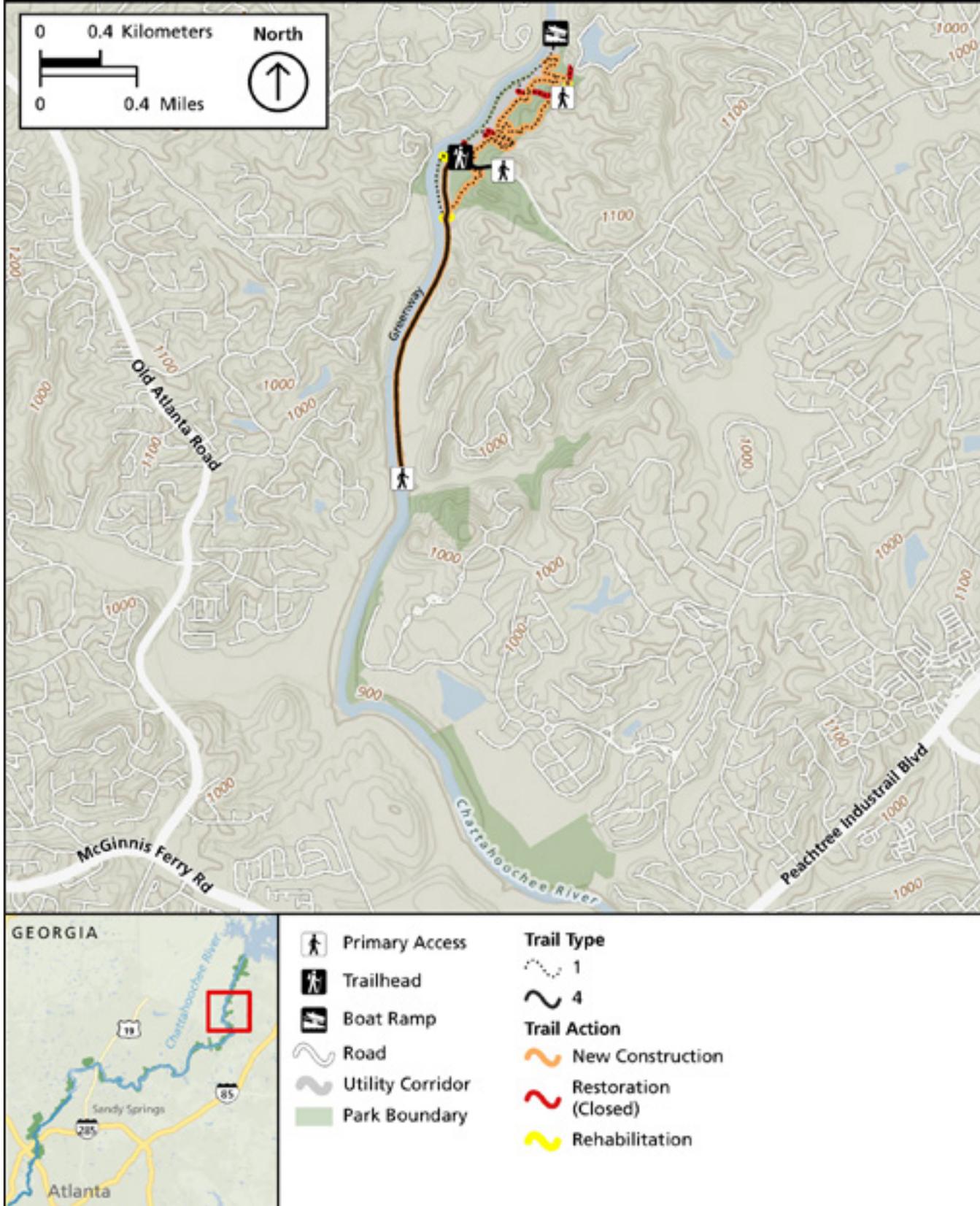


Figure B-7. Actions Associated with Alternative 2 – Settles Bridge

Settles Bridge Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

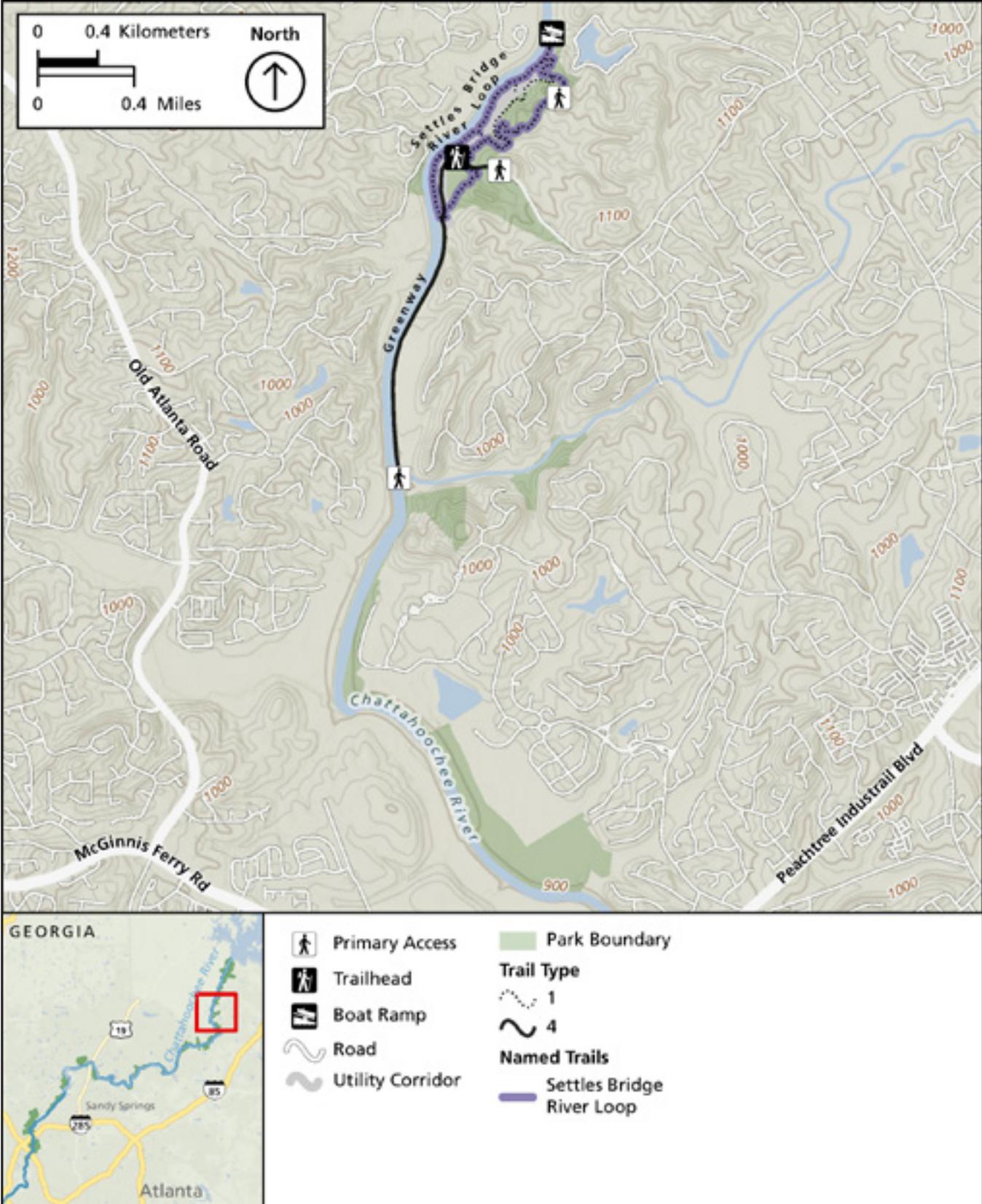


Figure B-8. Resultant Trail System, Alternative 2 – Settles Bridge

Settles Bridge North Detail

Chattahoochee River National Recreation Area, GA

National Park Service
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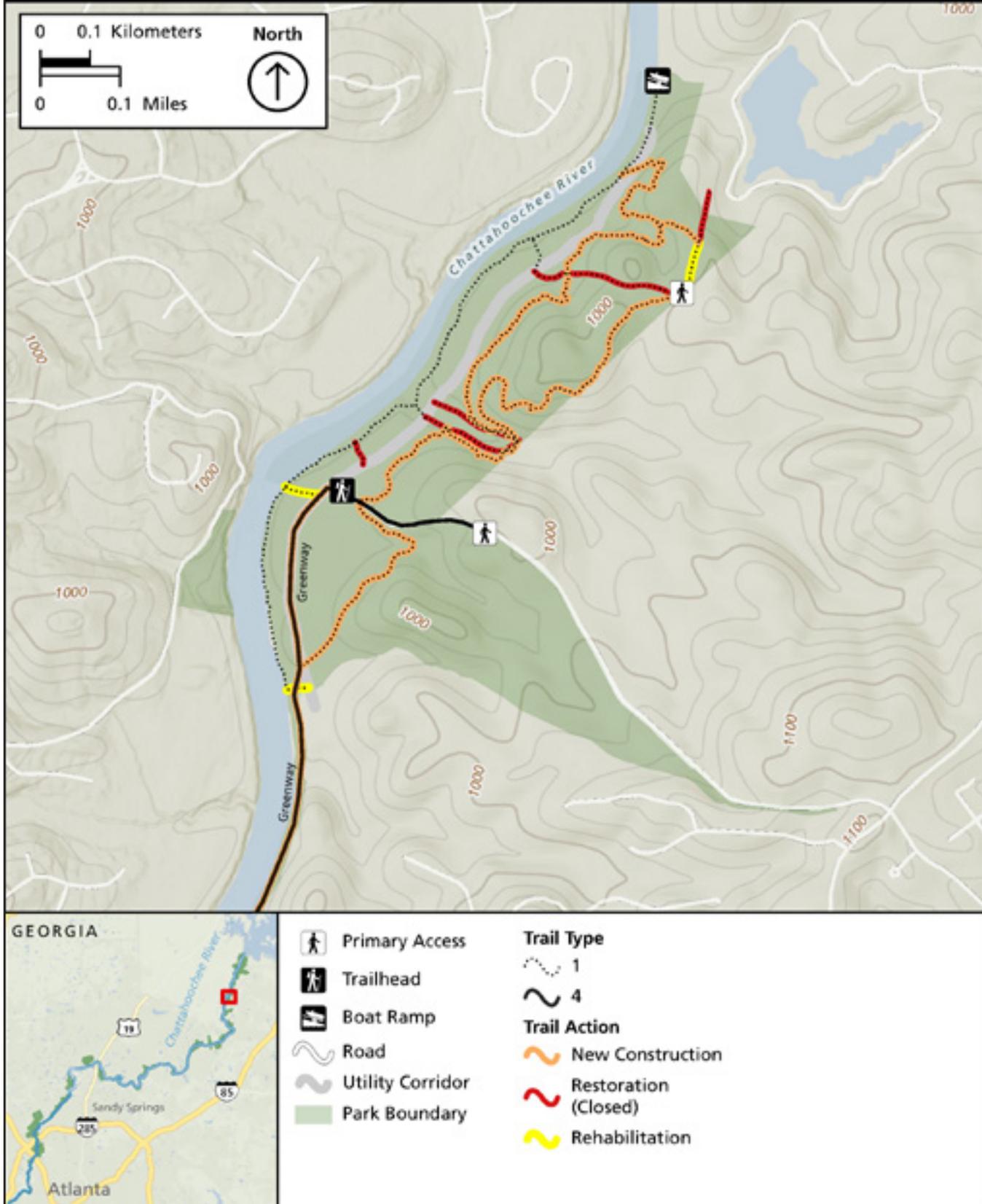
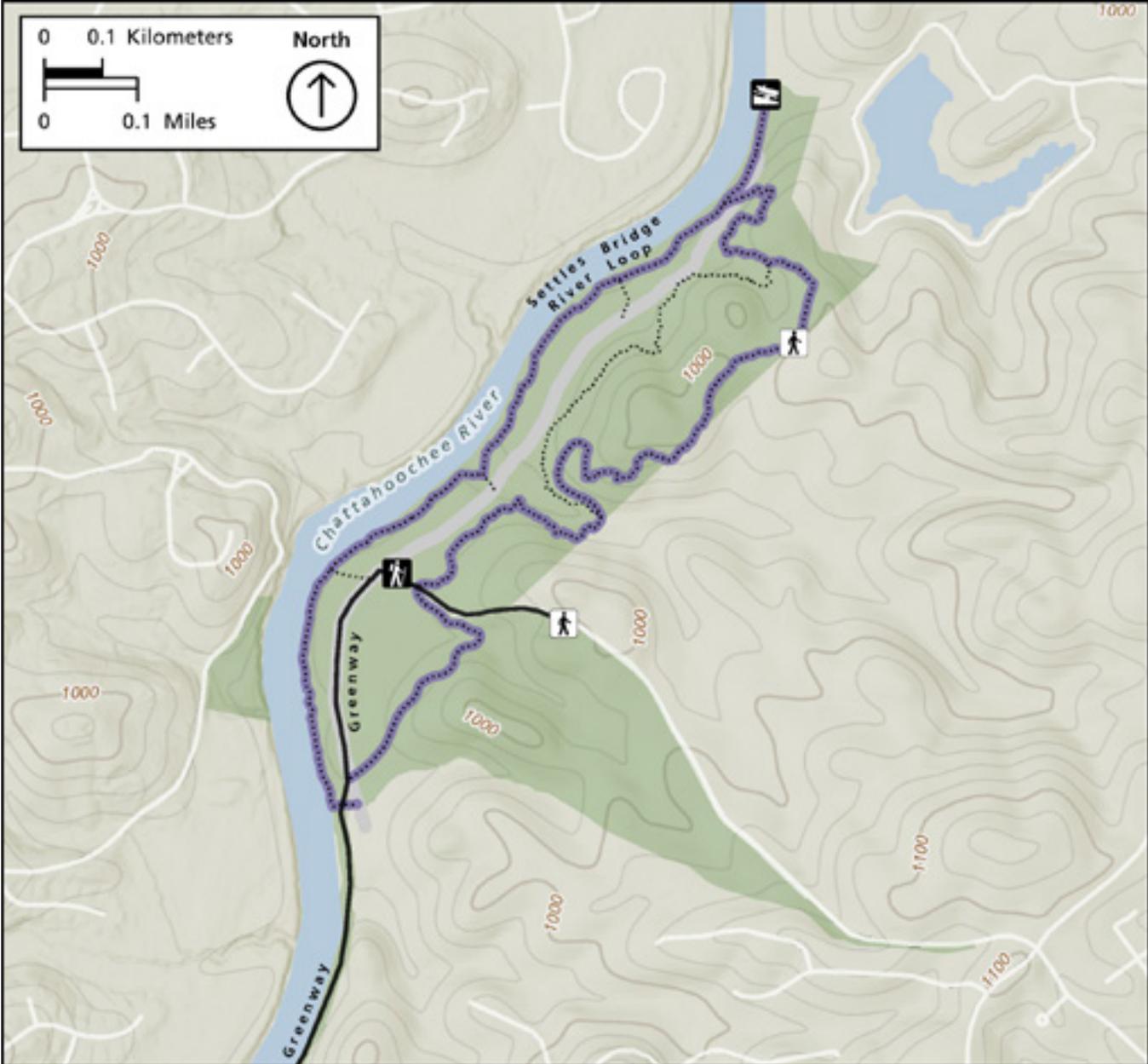


Figure B-9. Actions Associated with Alternative 2 – Settles Bridge North

Settles Bridge North Detail

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior



Primary Access	Park Boundary
Trailhead	Trail Type
Boat Ramp	1
Road	4
Utility Corridor	Named Trails
	Settles Bridge River Loop

Figure B-10. Resultant Trail System, Alternative 2 – Settles Bridge North

McGinnis Ferry

Mid- to Long-Term Actions:

- Connect to the potential greenway as appropriate.

Visitor Capacity Management Strategies:

- Establish a separate parking lot at the north end for a dedicated greenway and boat ramp parking access.
- Design the greenway to minimize erosion. Trail curbing to prevent social trailing.
- Install maps and signage about various destinations in the unit.
- Educate park visitors about the new opportunities in this unit.

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McGinnis Ferry Chattahoochee River National Recreation Area, GA

National Park Service
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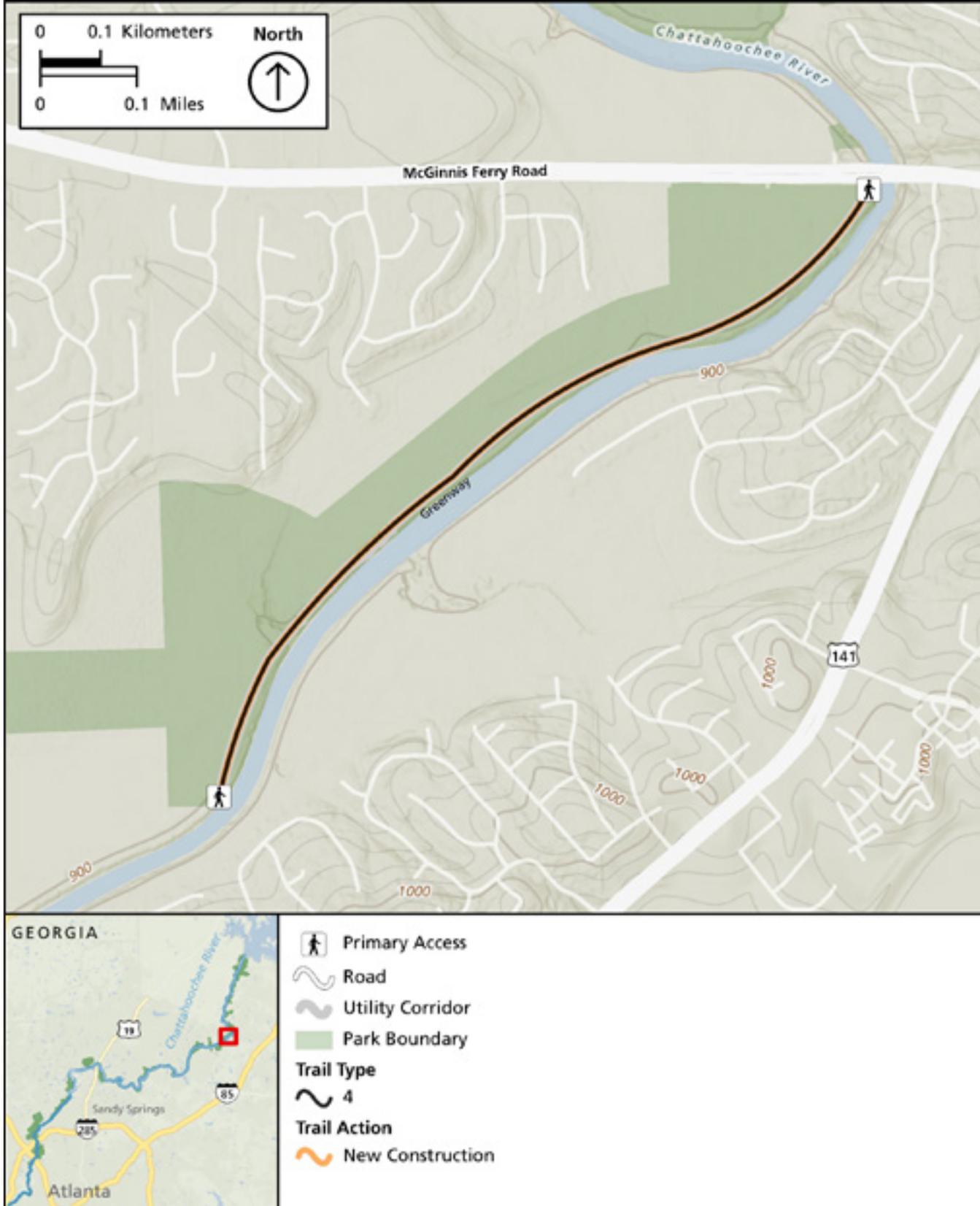


Figure B-11. Actions Associated with Alternative 2 – McGinnis Ferry

McGinnis Ferry Chattahoochee River National Recreation Area, GA

National Park Service
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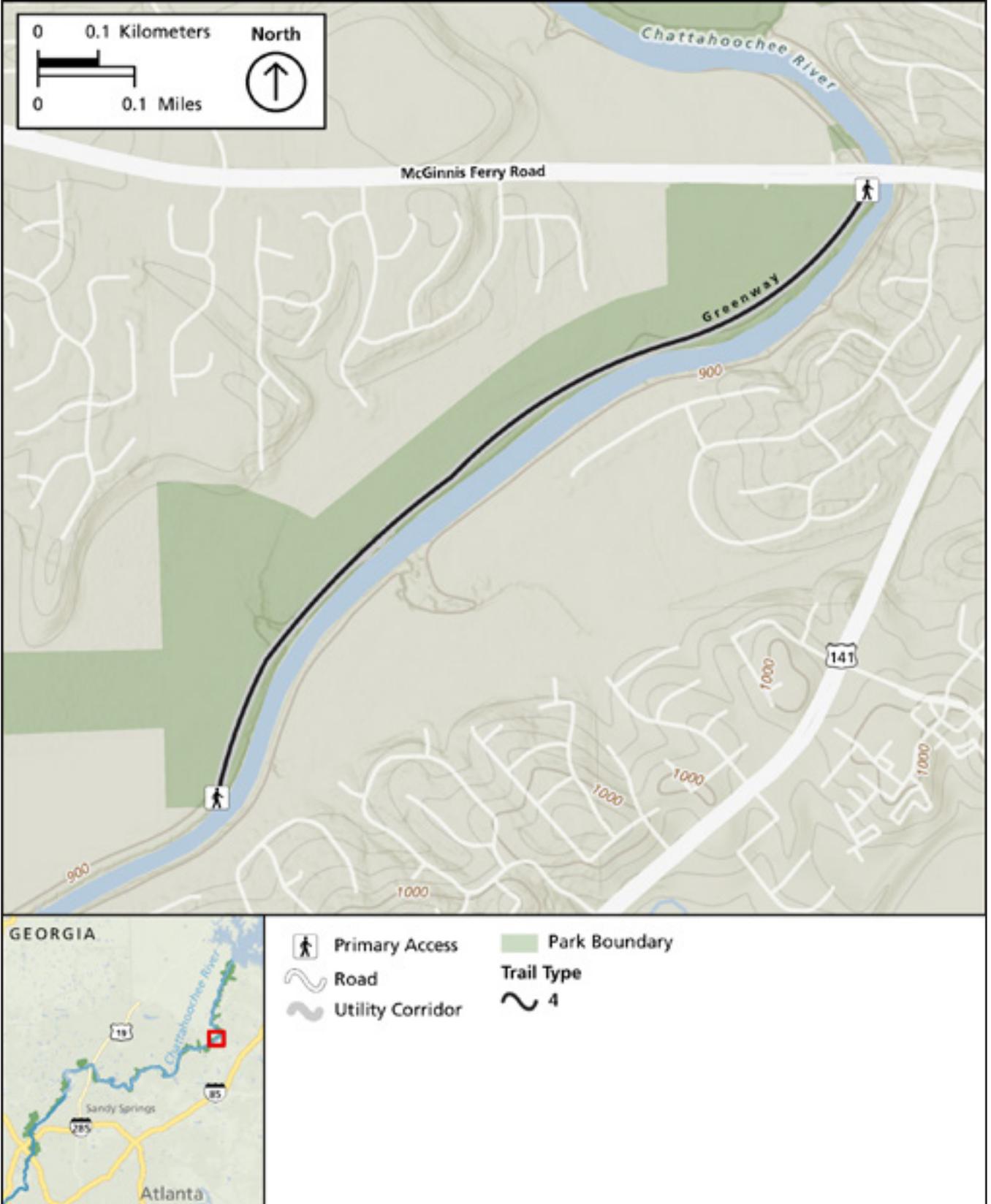


Figure B-12. Resultant Trail System, Alternative 2 – McGinnis Ferry

Suwanee Creek

Near-Term Actions:

- Remove outdated trail access point signage.

Mid- to Long-Term Actions:

- Continue to manage the unit in its natural condition.
- Collaborate with the City of Johns Creek to explore potential greenway connectivity toward the McGinnis Ferry unit.

Visitor Capacity Management Strategies:

- Avoid publicizing land-based recreational activities in Suwanee Creek.
- Discourage the creation of social trail by monitoring the “number of social trails” indicator.
- Monitor for any unacceptable impacts to cultural resources by monitoring the “incidences of vandalism at cultural sites” indicator.
- Educate residents about the desired conditions for Suwanee Creek and encourage “Leave No Trace” land ethics.

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Suwanee Creek

Chattahoochee River National Recreation Area, GA

National Park Service
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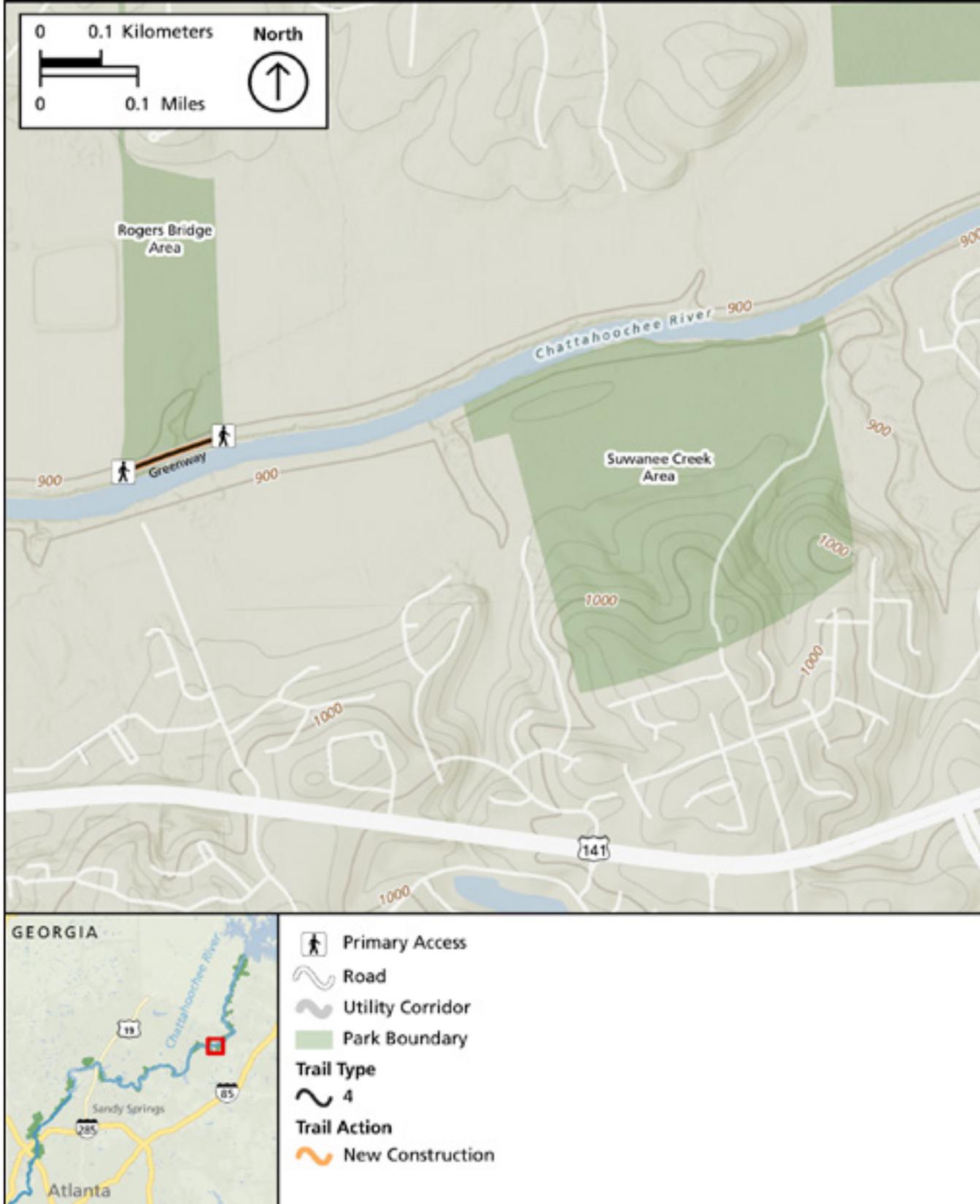


Figure B-13. Actions Associated with Alternative 2 – Suwanee Creek

Suwanee Creek Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior

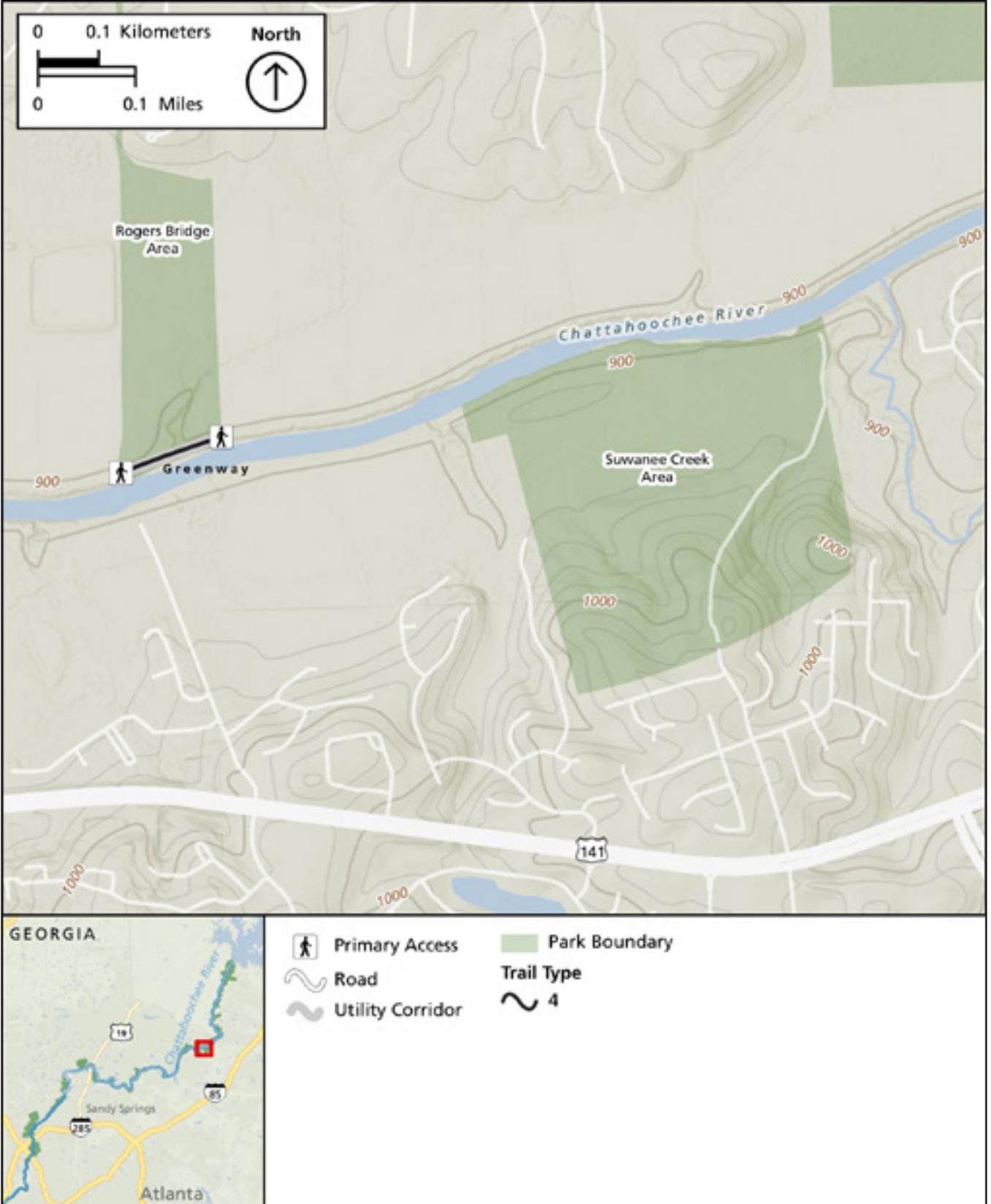


Figure B-14. Resultant Trail System, Alternative 2 – Suwanee Creek

Abbotts Bridge

Near-Term Actions:

- Clear encroaching vegetation and improve tread on the existing trail adjacent to the river.

Mid-Term Actions:

- Complete the loop trail that connects the pavilion area with the existing trail adjacent to the river.
- Connect to the potential greenway as appropriate (see “Abbotts Bridge Greenway Pilot Project” section above). Due to wet conditions throughout much of the unit, much of the greenway may need a boardwalk or be elevated in some way.

Visitor Capacity Management Strategies:

- Educate park visitors about the new trail opportunities in this unit to alleviate pressure on river-based activities.
- Consider moving the trailhead away from the river access to separate user groups and reduce frequency of visitor conflicts.

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Abbotts Bridge

Chattahoochee River National Recreation Area, GA

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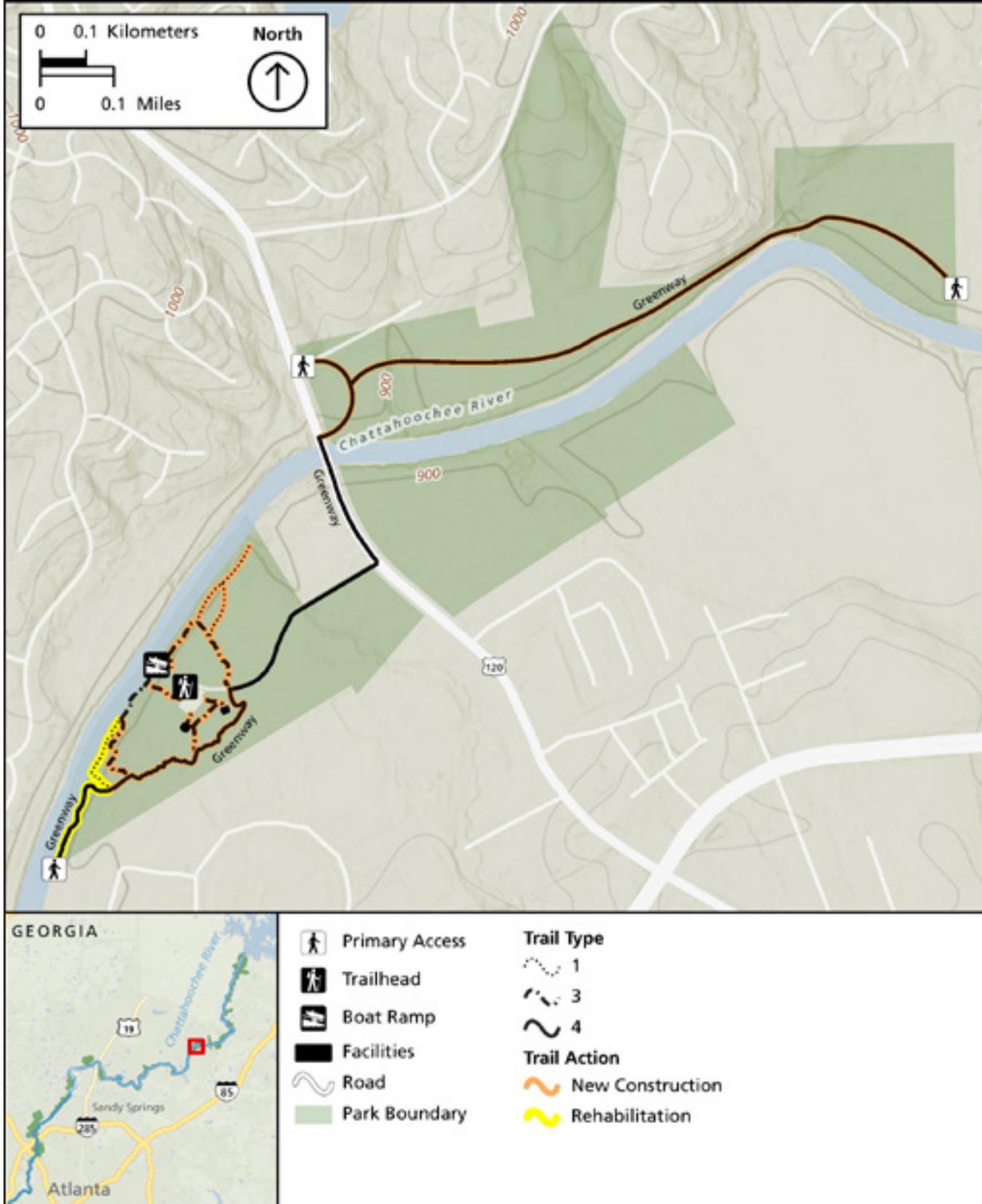
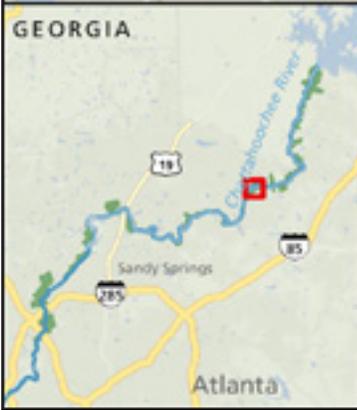
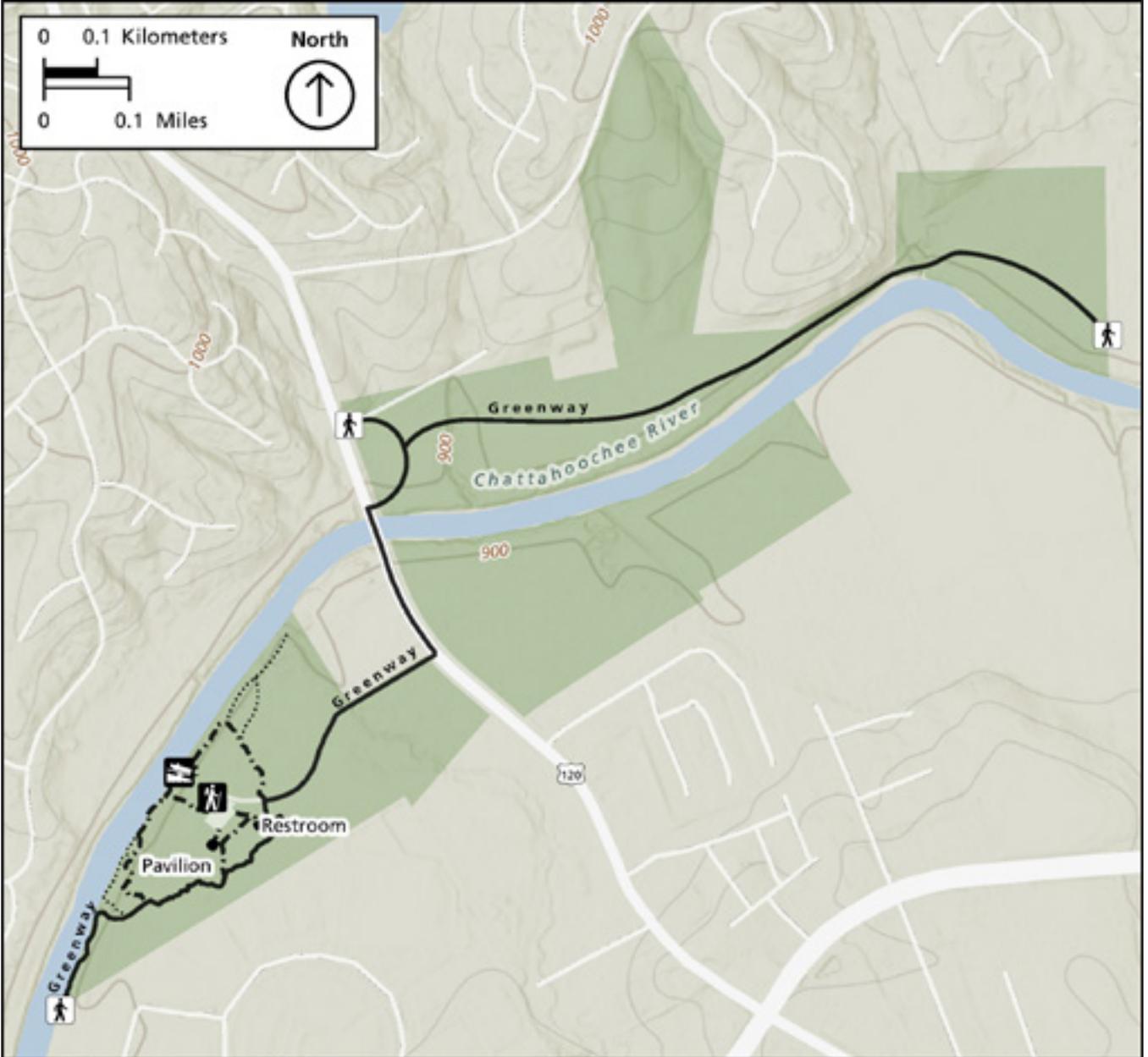


Figure B-15. Actions Associated with Alternative 2 – Abbotts Bridge

Abbotts Bridge

Chattahoochee River National Recreation Area, GA

National Park Service
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- Primary Access
- Trailhead
- Boat Ramp
- Facilities
- Road
- Park Boundary
- Trail Type**
- 1
- 3
- 4

Figure B-16. Resultant Trail System, Alternative 2 – Abbotts Bridge

Abbotts Bridge South Detail

Chattahoochee River National Recreation Area, GA

National Park Service
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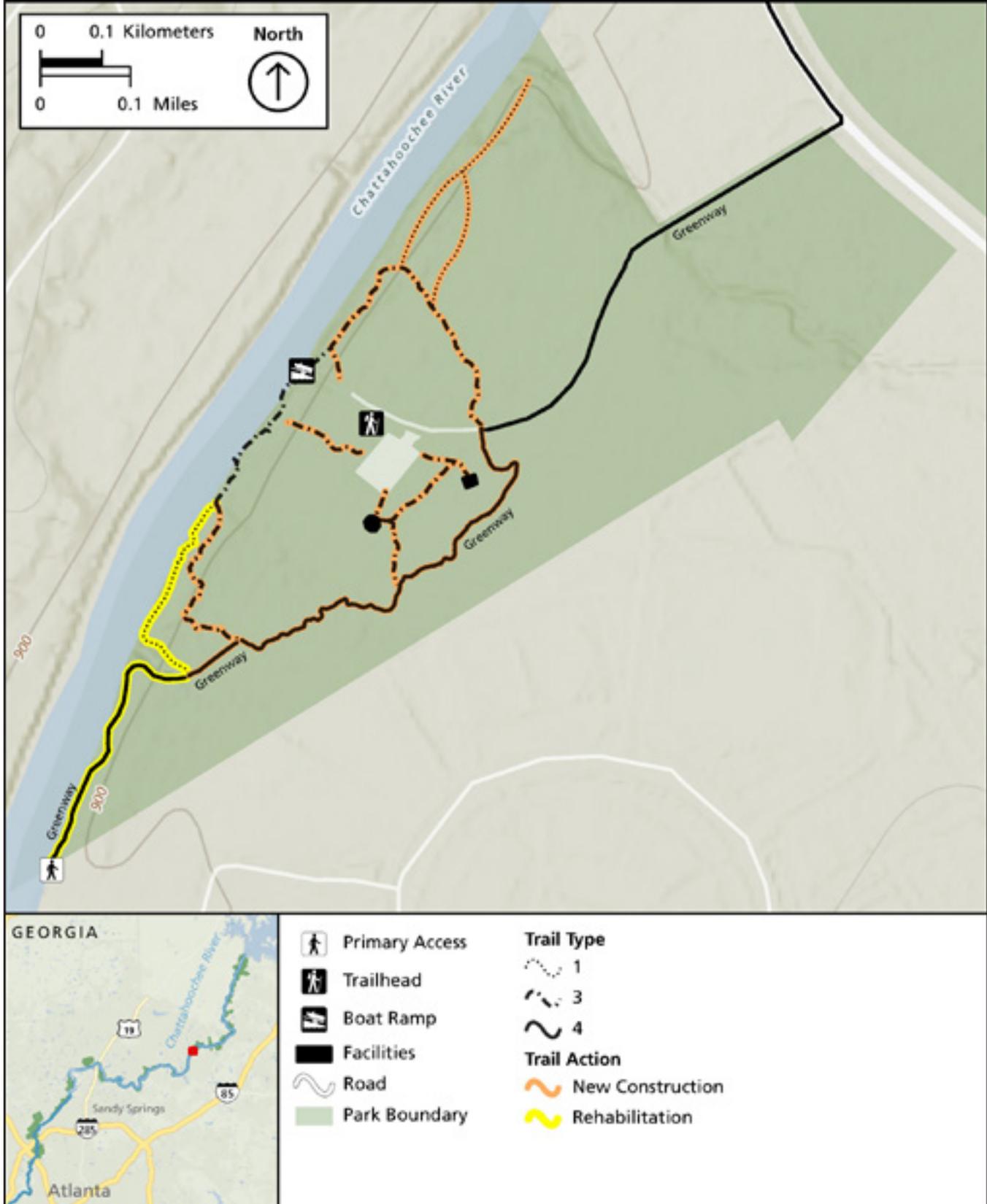
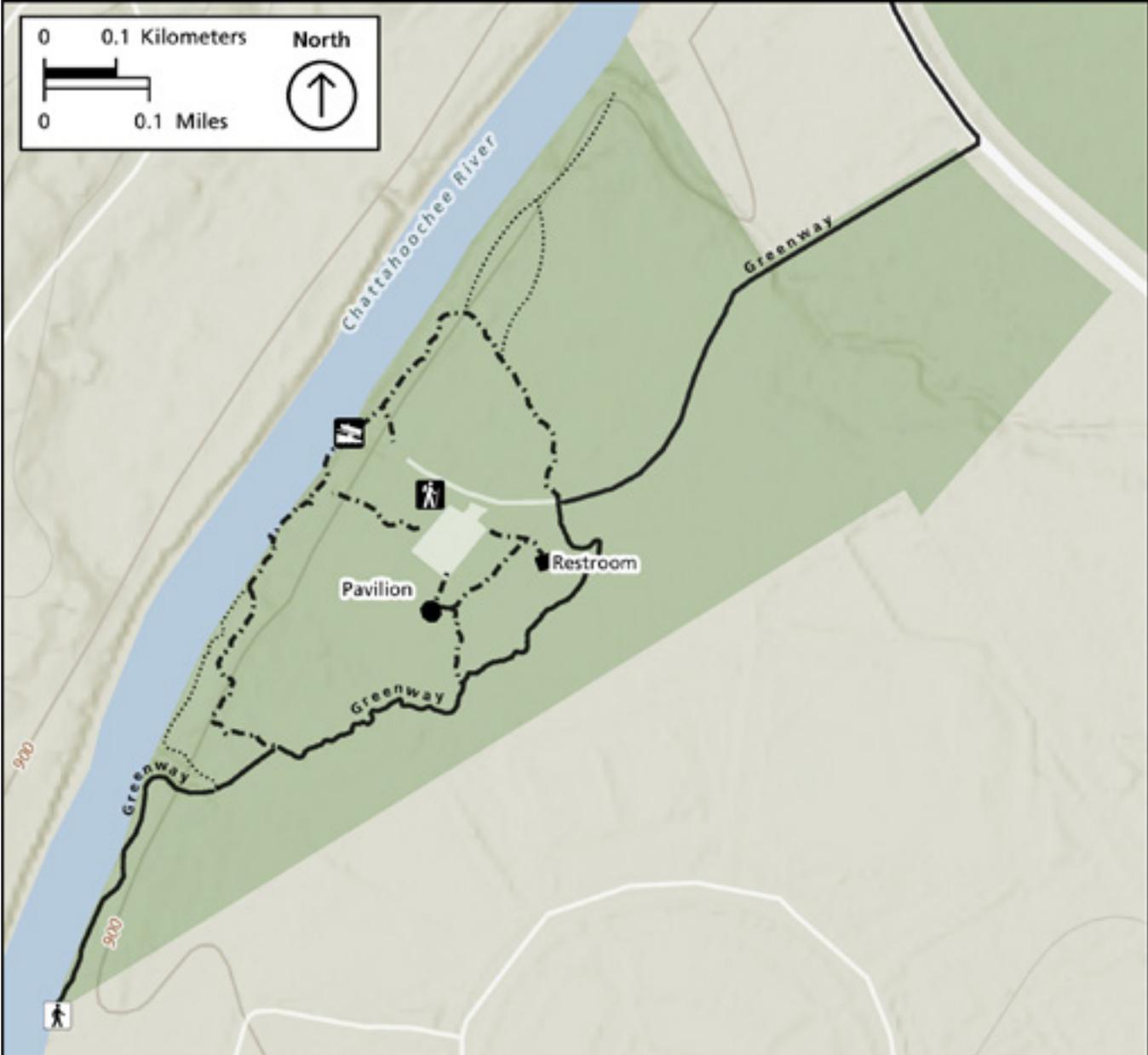


Figure B-17. Actions Associated with Alternative 2 – Abbotts Bridge South

Abbotts Bridge South Detail

Chattahoochee River National Recreation Area, GA

National Park Service
U.S. Department of the Interior



- Primary Access
- Trailhead
- Boat Ramp
- Facilities
- Road
- Park Boundary
- Trail Type**
- 1
- 3
- 4

Figure B-18. Resultant Trail System, Alternative 2 – Abbotts Bridge South

Medlock Bridge

Near-Term Actions:

- Assess and address issues with bridges and stair facilities that may soon fail and present a safety risk.
- Replace aging wayfinding maps and reorient them based on the trail user's perspective.

Mid-Term Actions:

- Designate and develop appropriate primary and secondary trail access points to improve connectivity with the surrounding community.
- Reduce and reroute the unsustainable trail system on the high point, while maintaining some visitor access along a sustainable alignment that traverses the landscape and provides access to the rock outcroppings.
- Rehabilitate the picnic area.

Long-Term Actions:

- Develop southern spur trail into a longer stacked loop, adding about 0.3 miles of trail to the unit.

Visitor Capacity Management Strategies:

- Increase signage that communicates the necessity of parking in designated areas.
- Reengineer the parking lot to include more boat parking spaces in the northern end to decrease the impacts on trail parking.
- Increase the enforcement of parking outside of designated areas. A visitor use assistant or volunteer could help with enforcement at peak times.

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Medlock Bridge

Chattahoochee River National Recreation Area, GA

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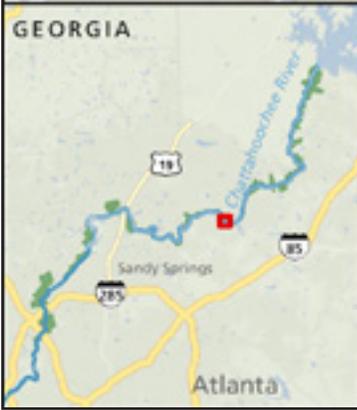
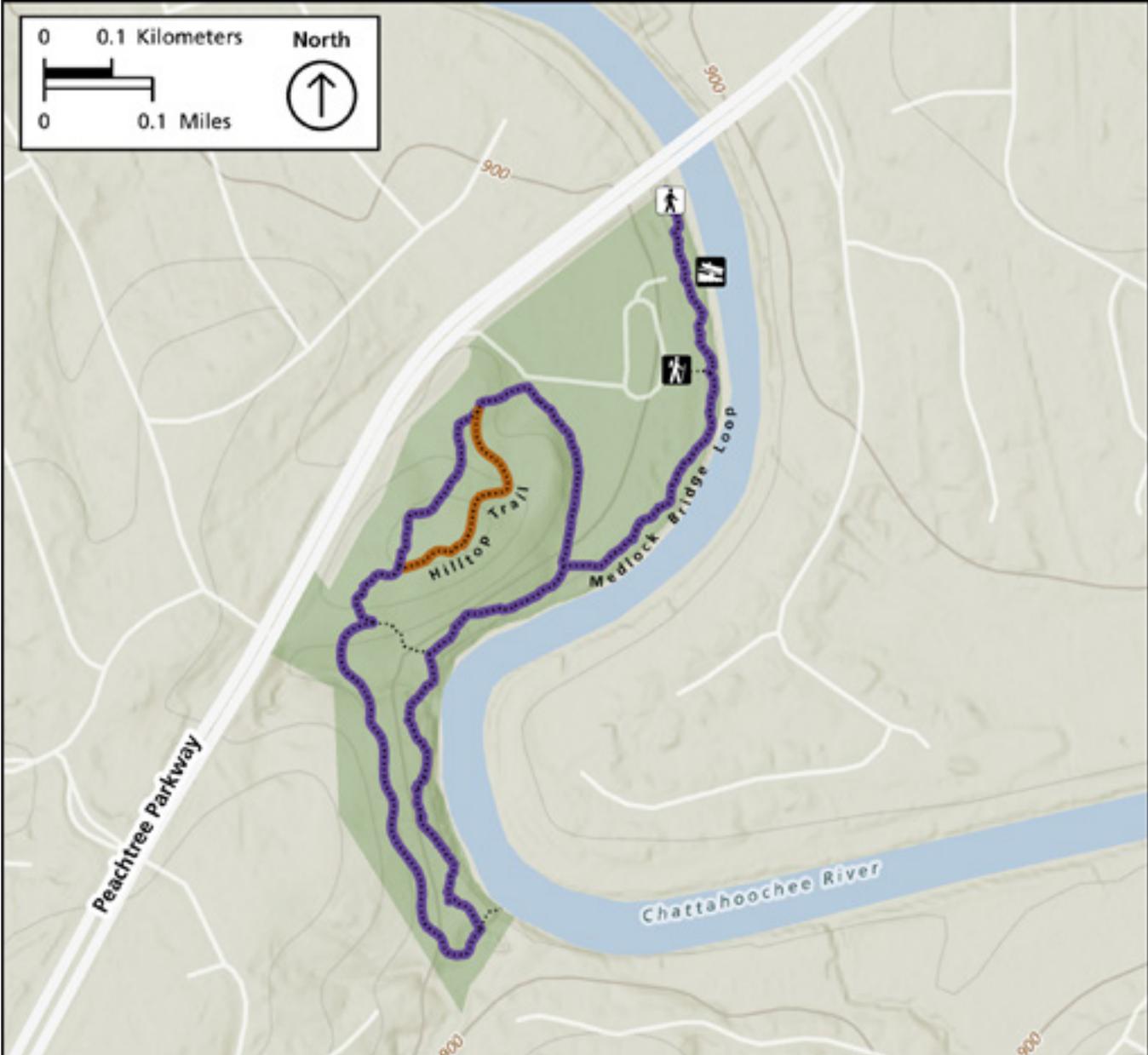


Figure B-19. Actions Associated with Alternative 2 – Medlock Bridge

Medlock Bridge

Chattahoochee River National Recreation Area, GA

National Park Service
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- | | | |
|--|----------------|---------------------|
| | Primary Access | Trail Type |
| | Trailhead | 1 |
| | Boat Ramp | Named Trails |
| | Road | Hilltop Trail |
| | Park Boundary | Medlock Bridge Loop |

Figure B-20. Resultant Trail System, Alternative 2 – Medlock Bridge

Jones Bridge

Near-Term Actions:

- Repair damaged trail signs.
- Designate the CREEC parking area as a trailhead to improve public access to the southern portion of the unit.
- Coordinate with the Chattahoochee River Environmental Education Center regarding public access to the parking area and cultivate a relationship with the River Glen homeowners' association.
- Work with the adjoining landowner on an easement to allow for more sustainable alignment of the trail near the southern end of the unit.
- Potentially add trail access to the dam on the pond.

Mid-Term Actions:

- Restore unsustainable, fall-aligned, and low-lying unauthorized trails and provide improved, contour-aligned routes that preserve longer loop opportunities. Develop a widely accessible trail in the northern portion of the unit.
- Designate and develop appropriate primary and secondary trail access points.
- Designate and improve the existing boat launch in the middle of the unit as a trailhead, with a few additional parking spaces and appropriate facilities. Improve signage related to available parking elsewhere at the Jones Bridge North and CREEC parking lots.
- Redesign the northern trailhead to draw visitors onto the main trail instead of the sewer line easement.
- Redevelop existing trails through rolling contour alignment and full bench construction, taking advantage of topography to reduce the need and/or span of bridges and structures.

- Connect to the potential greenway, as appropriate. After crossing the river just above the shoals, the greenway would follow the utility corridor on the west bank before following the access road out of the unit. This alignment would provide connectivity between the heart of the Jones Bridge unit and the Gwinnett County park across the river, provide an exciting visitor experience with the bridge just upstream from the shoals, and protect viewsheds.

Visitor Capacity Management Strategies:

North segment:

- Educate park visitors about trail opportunities at the Chattahoochee River Environmental Education Center, just south of Jones Bridge.
- Install signs at parking area informing visitors that if parking at Jones Bridge is full, they can recreate at the Chattahoochee River Environmental Education Center down the road.
- Increase enforcement of regulations at this unit.

South segment:

- Promote this unit for its trail opportunities.
- Educate visitors about trails that lead onto private property in this area.
- Install signs on NPS land marking the NPS boundary, where land beyond the sign is trespassing onto private property.
- Partner with neighboring private landowners to install signs on their property and communicate that their land is private property that is closed to the public.
- Consider installing a temporary or permanent restroom at the Chattahoochee River Environmental Education Center to support the public (the restroom inside the CREEC building is closed to the public).

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Jones Bridge North

Chattahoochee River National Recreation Area, GA

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Figure B-21. Actions Associated with Alternative 2 – Jones Bridge North

Jones Bridge North

Chattahoochee River National Recreation Area, GA

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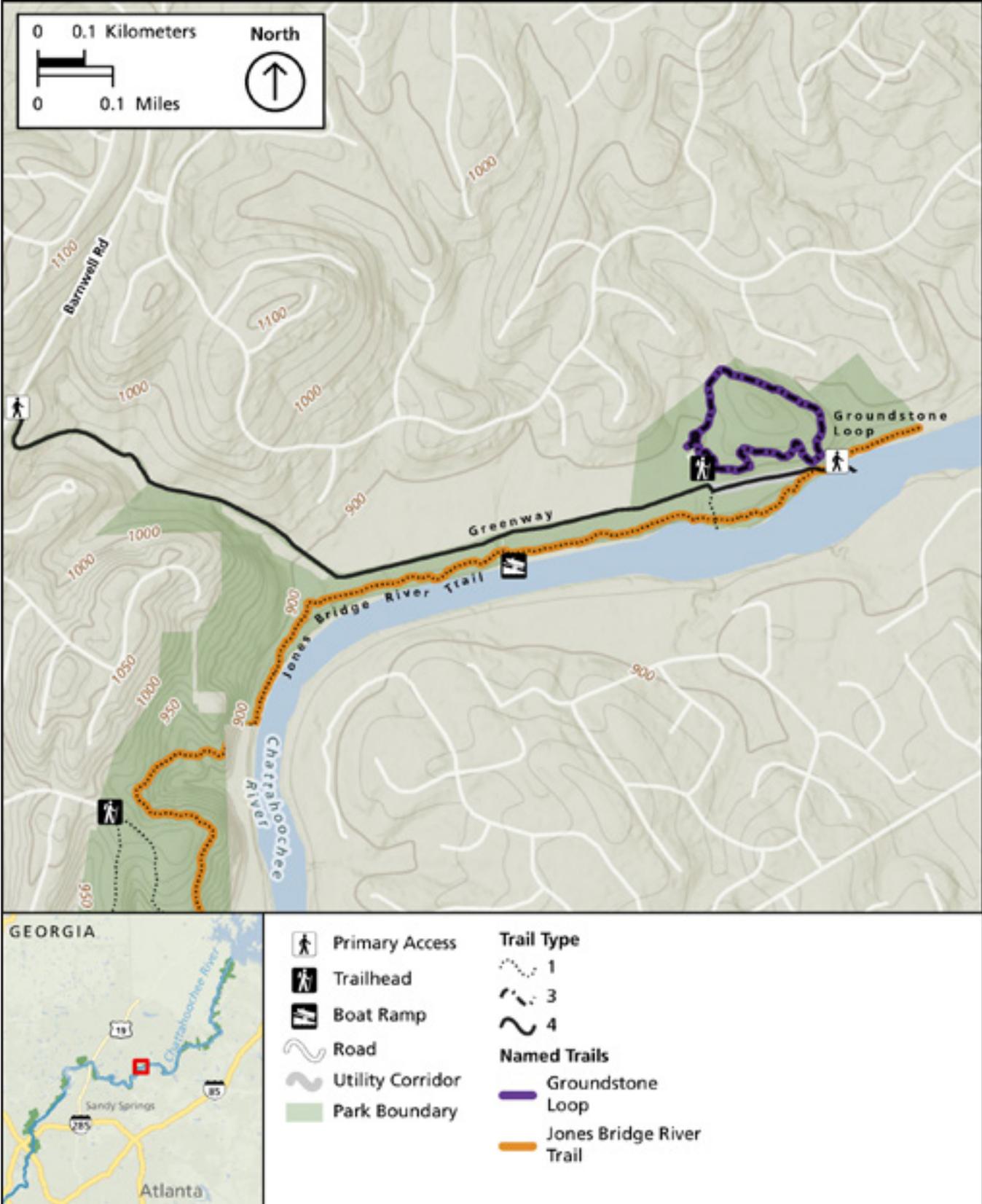


Figure B-22. Resultant Trail System, Alternative 2 – Jones Bridge North

Jones Bridge South

Chattahoochee River National Recreation Area, GA

National Park Service
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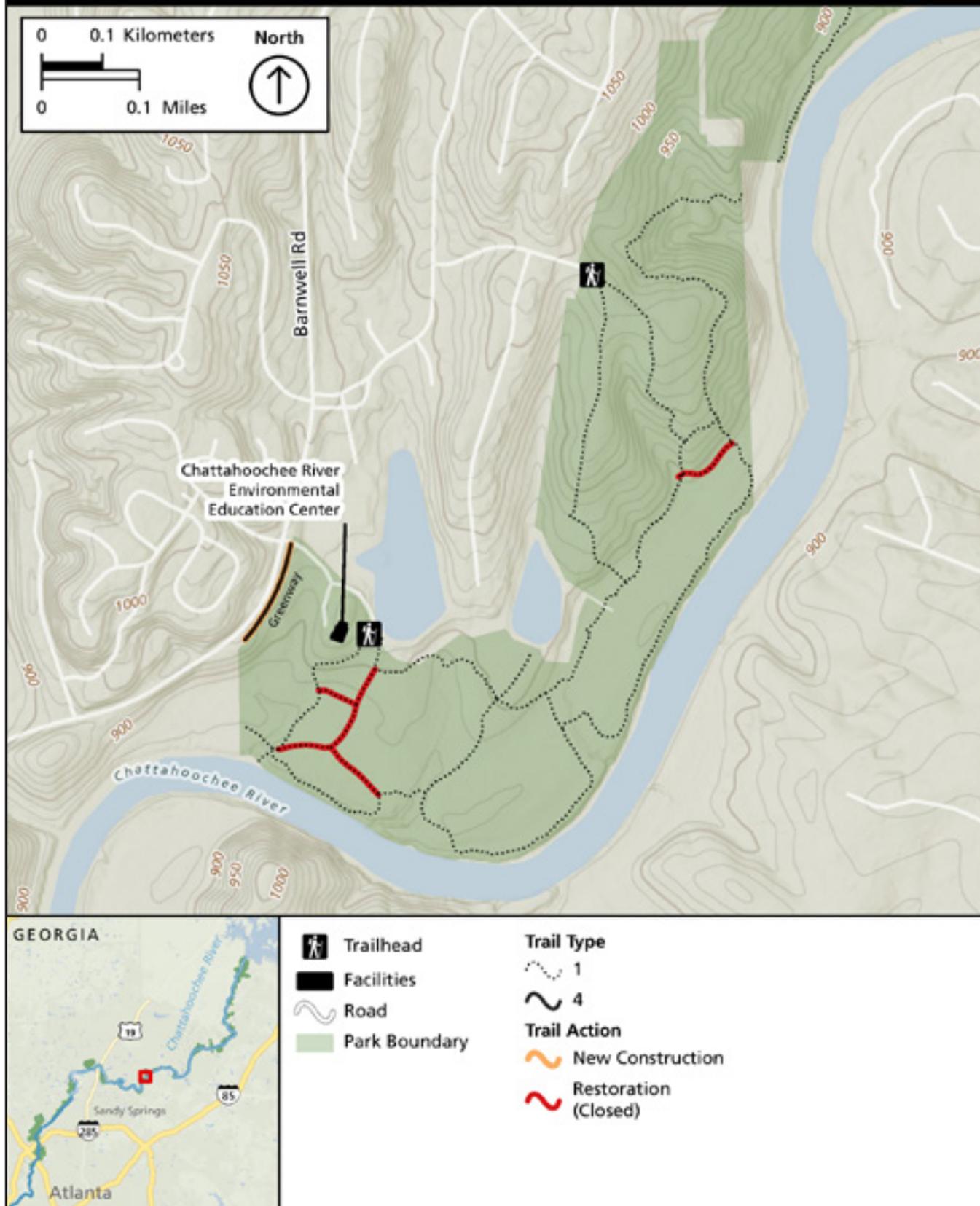
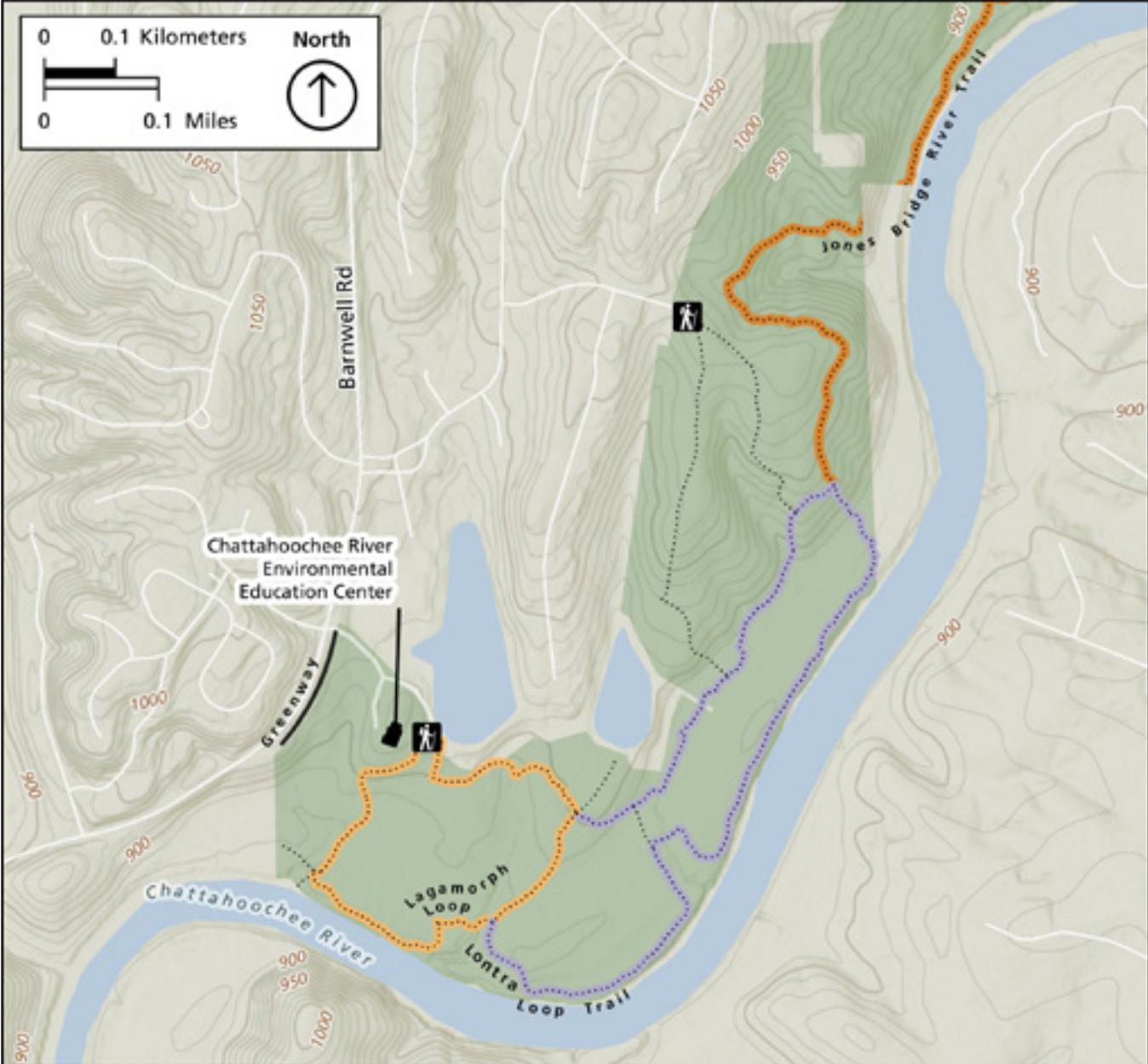


Figure B-23. Actions Associated with Alternative 2 – Jones Bridge South

Jones Bridge South

Chattahoochee River National Recreation Area, GA

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- | | |
|-------------------|--------------------------|
| Trailhead | Named Trails |
| Facilities | Jones Bridge River Trail |
| Road | Lagamorph Loop |
| Park Boundary | Lontra Loop Trail |
| Trail Type | |
| 1 | |
| 4 | |

Figure B-24. Resultant Trail System, Alternative 2 – Jones Bridge South

Holcomb Bridge

Mid-Term Actions:

- Address low-lying areas through the construction of boardwalks or other elevated trail construction.

Long-Term Actions:

- Contingent upon the completion of external pedestrian connections to Garrard Landing Park and Holcomb Bridge Park and their associated parking areas, construct a short natural surface trail connecting these areas to the recently constructed loop.

Visitor Capacity Management Strategies:

- Promote this area through marketing, social media, and website materials.
- Work with interpretation staff to direct visitors to this area.
- Add trail maps for the Holcomb Bridge unit on the park website.
- Consider holding an official opening of this unit (i.e., ribbon cutting) to publicize the unit and its trail opportunities.
- Partner with the City of Sandy Springs to hang a NPS sign under the Sandy Springs sign to inform visitors of the unit's recreational opportunities.
- Install maps and wayfinding signs on the unit's trails.

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Holcomb Bridge

Chattahoochee River National Recreation Area, GA

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Figure B-25. Actions Associated with Alternative 2 – Holcomb Bridge

Holcomb Bridge

Chattahoochee River National Recreation Area, GA

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U.S. Department of the Interior

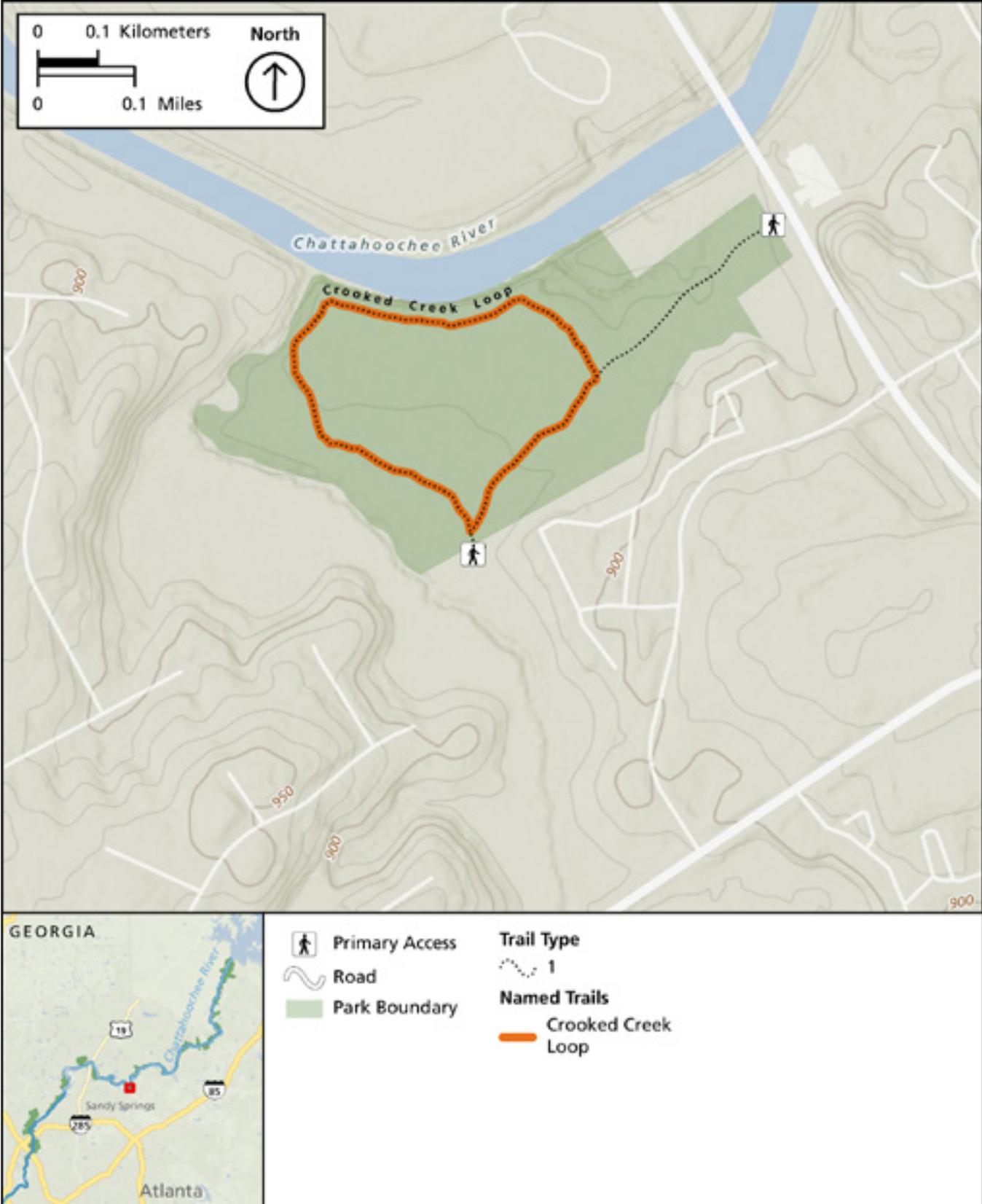


Figure B-26. Resultant Trail System, Alternative 2 – Holcomb Bridge

Island Ford

Near-Term Actions:

- Recently relocated trails would be improved to incorporate enhanced, full bench construction, rolling contours, and positive cross-slope.
- Clean out culverts and include some paved surfaces to divert runoff from step structures.
- Construct water management structures (such as grade reversals) on trails that would be maintained in the system.

Mid-Term Actions:

- Continue relocation and restoration efforts throughout the trail system to provide longer, more sustainable trail-based recreational opportunities.
- Restore unsustainable trails and provide improved, contour-aligned routes that provide longer loop opportunities.
- Designate and develop appropriate primary and secondary trail access points.
- Implement treatment recommendations in the Hewlett Lodge Cultural Landscape Report to address additional parking and restroom facilities.

Visitor Capacity Management Strategies:

- Increase visitor awareness about opportunities in the northern part of the Island Ford unit. Disperse use to this “hidden gem.”
- Encourage the use of alternative parking lot away from Hewlett Lodge. Consider adding a restroom in the northern parking lot to reduce congestion around the Hewlett Lodge.
- Install a parking barrier along the hairpin turn to improve visitor safety.
- Redistribute or reconfigure parking to allow parking at Hewlett Field in a way that does not disturb the viewshed of the field, as described in the cultural landscape report.
- Post signs indicating when a particular parking lot (Hewlett Lodge area) is at capacity. Encourage visitors to return at an off-peak time.

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Island Ford North

Chattahoochee River National Recreation Area, GA

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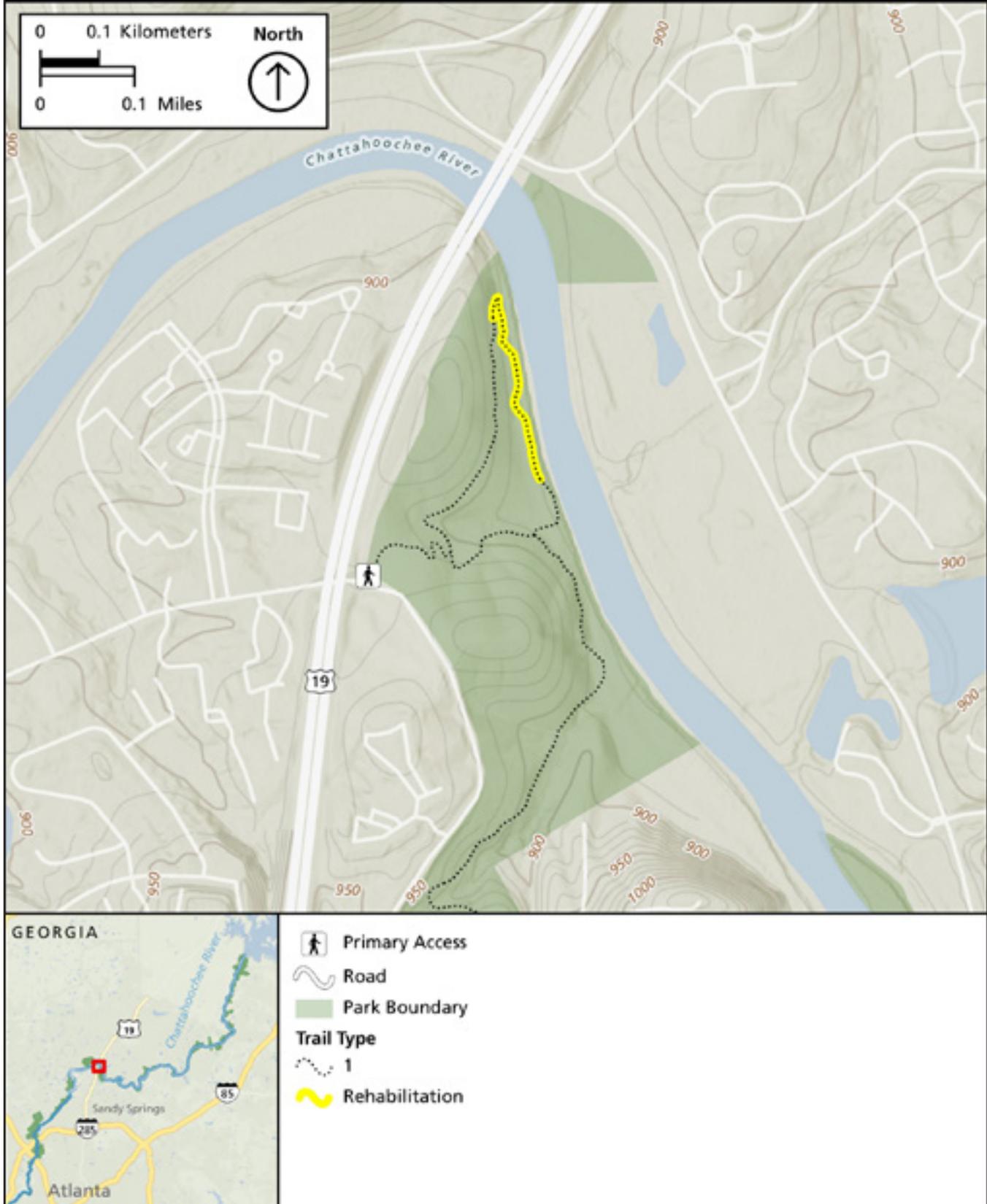
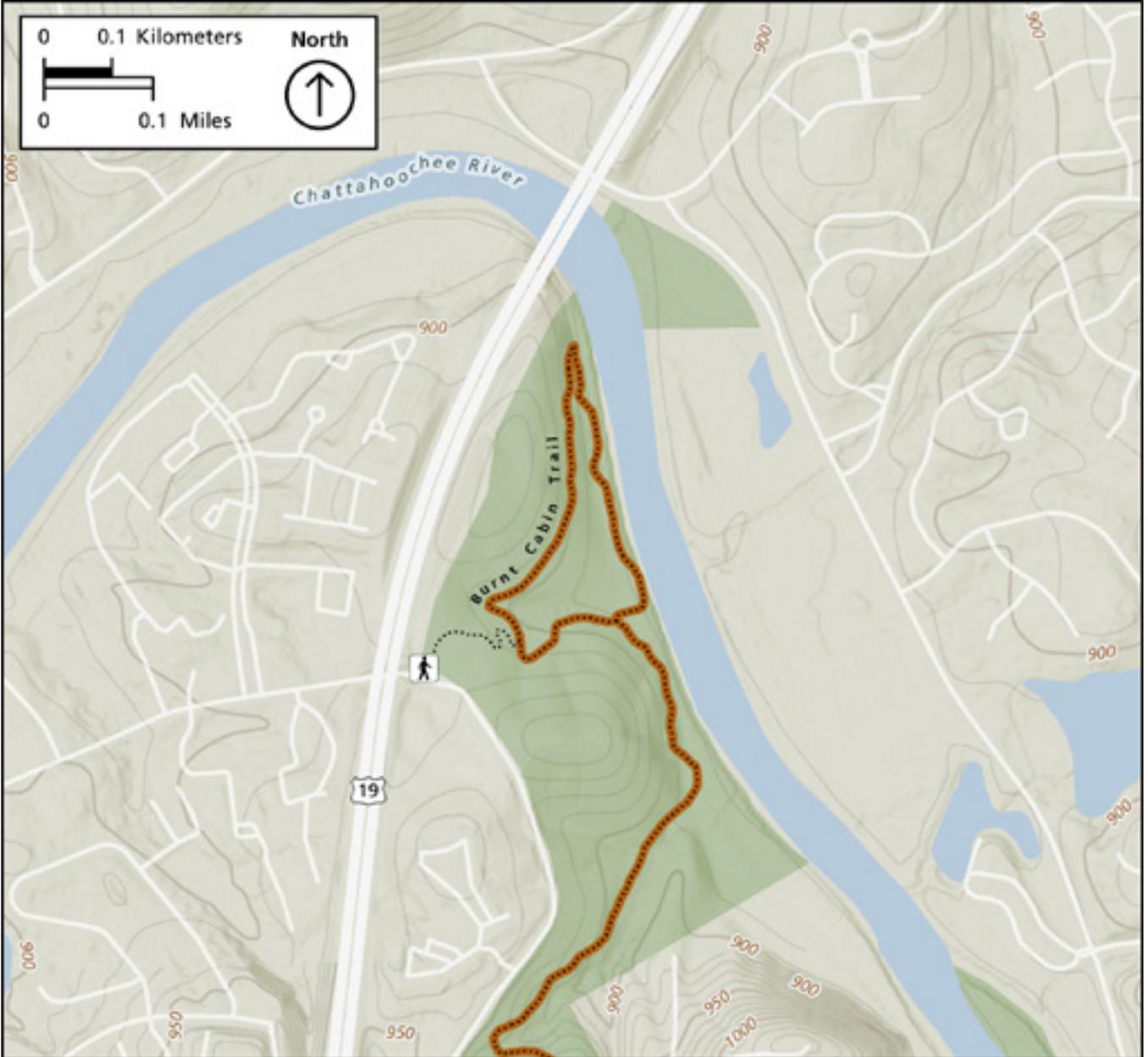


Figure B-27. Actions Associated with Alternative 2 – Island Ford North

Island Ford North

Chattahoochee River National Recreation Area, GA

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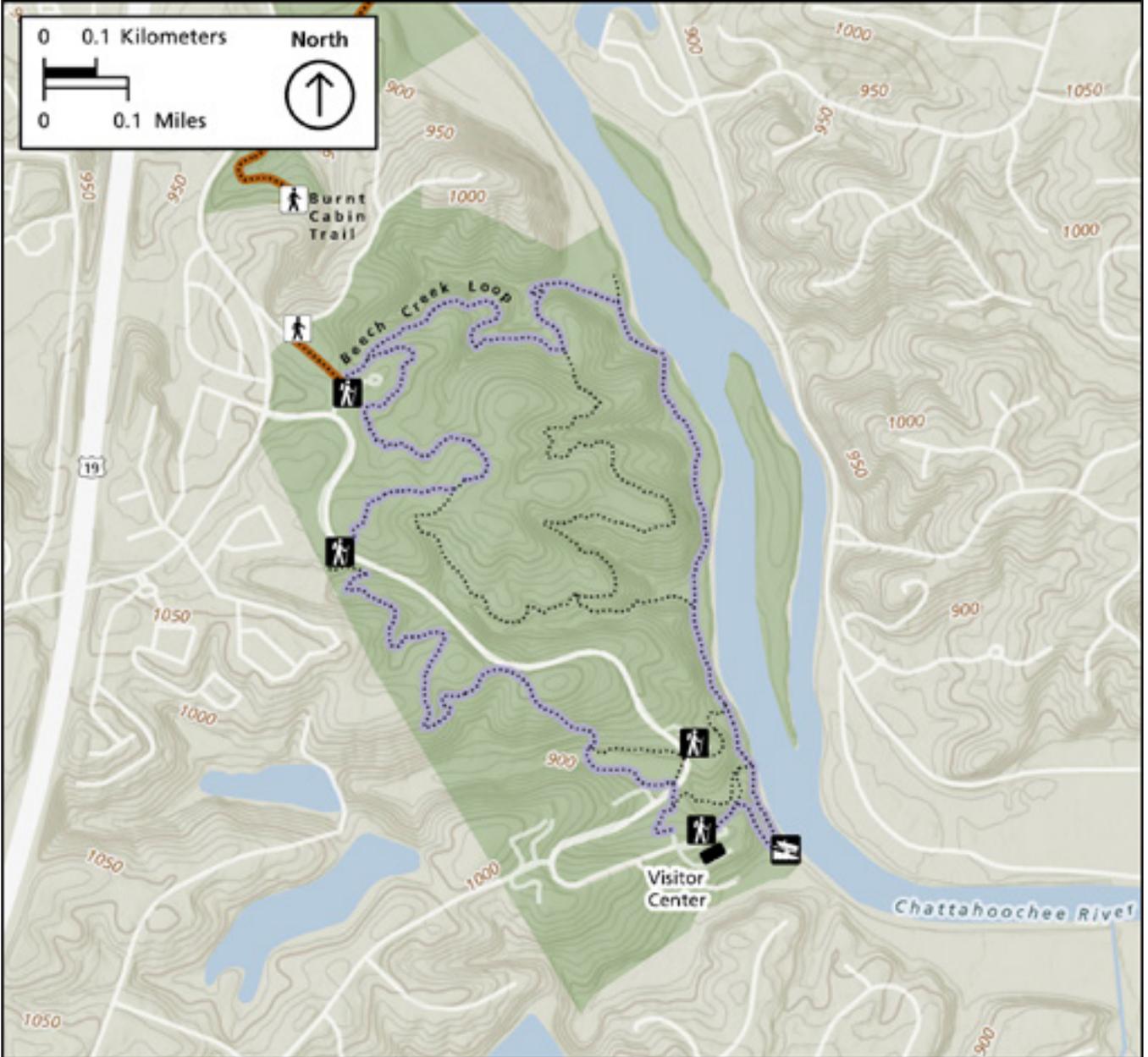
Primary Access	Trail Type
Road	1
Park Boundary	Named Trails
	Burnt Cabin Trail

Figure B-28. Resultant Trail System, Alternative 2 – Island Ford North

Island Ford South

Chattahoochee River National Recreation Area, GA

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Primary Access	Park Boundary
Trailhead	Trail Type
Boat Ramp	1
Facilities	Named Trails
Road	Beech Creek Loop
	Burnt Cabin Trail

Figure B-30. Resultant Trail System, Alternative 2 – Island Ford South

Vickery Creek

Near-Term Actions:

- Designate and develop appropriate primary and secondary trail access points.
- At Allenbrook, partner with the City of Roswell to align implementation of the Roswell Historic Gateway Project trails with trails in this plan.
- Examine safety issues at the stone dam and coordinate with City of Roswell to take actions as necessary.

Mid-Term Actions:

- Restore unsustainable trails and provide improved, contour-aligned routes that provide longer loop opportunities in a smaller acreage land unit.
- Work with partners as needed to encourage safer creek crossings on authorized trails and away from high-risk utility pipe crossings.
- At Allenbrook, complete large-scale stonework along one of the highly eroded unauthorized trails adjacent to the climbing crag to create a semiformal rock “scramble” route to facilitate sustainable, unroped travel between the top and bottom of the crag. Formalize the belay and bouldering area at the bottom of the crag. Conduct water management uphill from the Lovers Leap overlook to mitigate runoff. Install interpretive signage at the top of Lovers Leap introducing casual visitors to the basics of sport and top rope climbing. This signage would provide physical/visual cues defining the overlook at an impressive vantage point and emphasize the importance of staying clear of the cliff edge and climbers’ protective equipment.
- The Roswell Riverwalk may be designated a part of the potential greenway. No change would occur to the design or use of the Roswell Riverwalk.
- Manage bike weirs or bollards at intersections with the Roswell Riverside/Gateway multiuse path.

Long-Term Actions:

- Explore and develop possible connections across Vickery Creek to the Ivy Mill ruin and Roswell’s Riverside Park.

Visitor Capacity Management Strategies:

- Install directional wayfinding signage to encourage more visitation to the eastern side of the Vickery Creek unit and improve flow of visitors through the western side of the unit. Increase maps and signage about various destinations away from highly developed sites. Within the western side of the unit, include targeted directional signage that shows the way to key destinations such as the covered bridge, mill, Allenbrook, and others.
- Improve visitor awareness of the relative remoteness of the unit’s interior to encourage visitors to be better prepared for the challenges present.
- Develop suggested hiking routes for the Vickery Creek unit that align with the City of Roswell tourism market.
- Provide information to visitors about sites that are likely to be busy so they know of those conditions before they arrive.
- Increase enforcement of parking outside of designated areas. A visitor use assistant or volunteer could help with enforcement at peak times.

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Vickery Creek

Chattahoochee River National Recreation Area, GA

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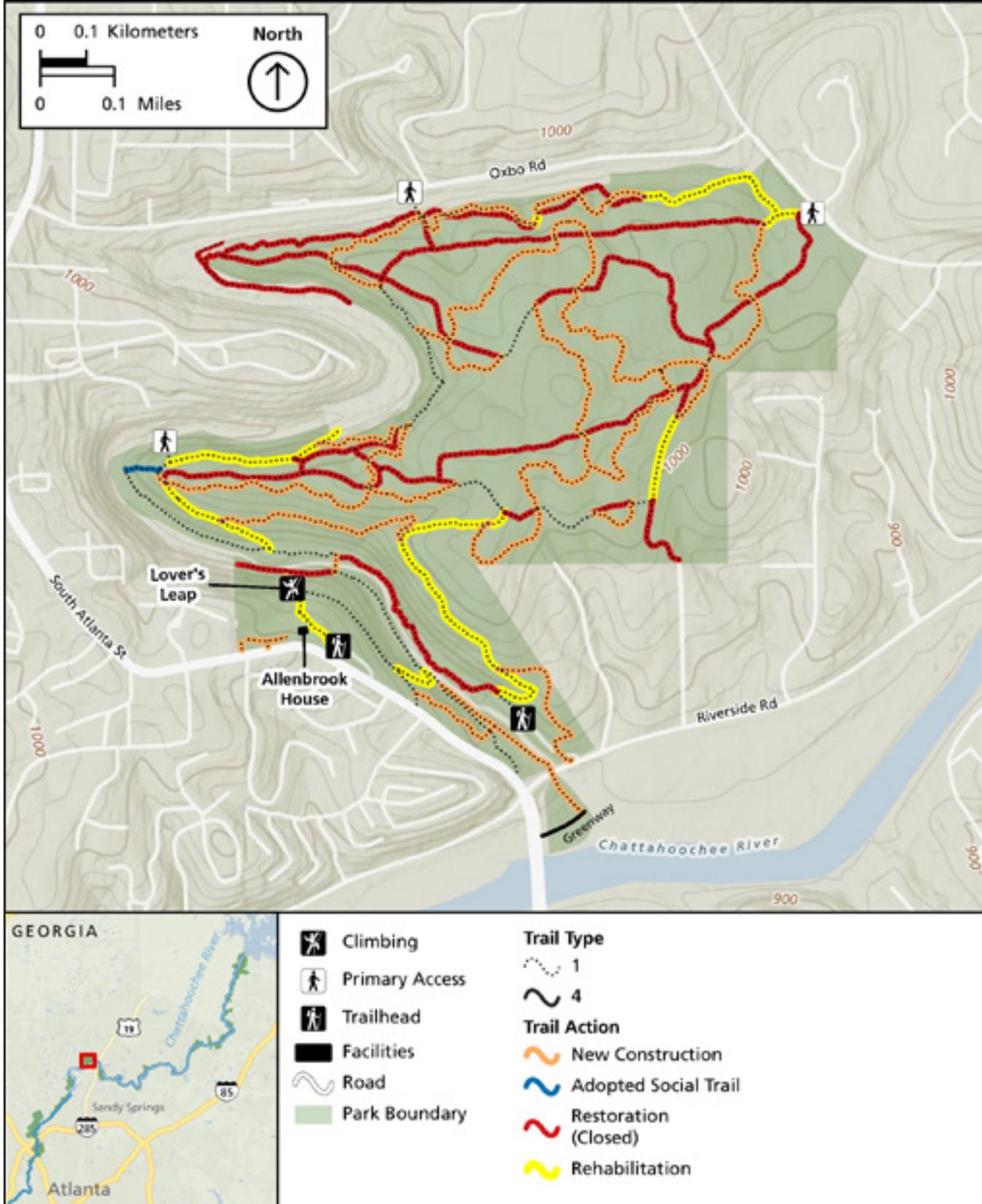


Figure B-31. Actions Associated with Alternative 2 – Vickery Creek

Vickery Creek

Chattahoochee River National Recreation Area, GA

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U.S. Department of the Interior

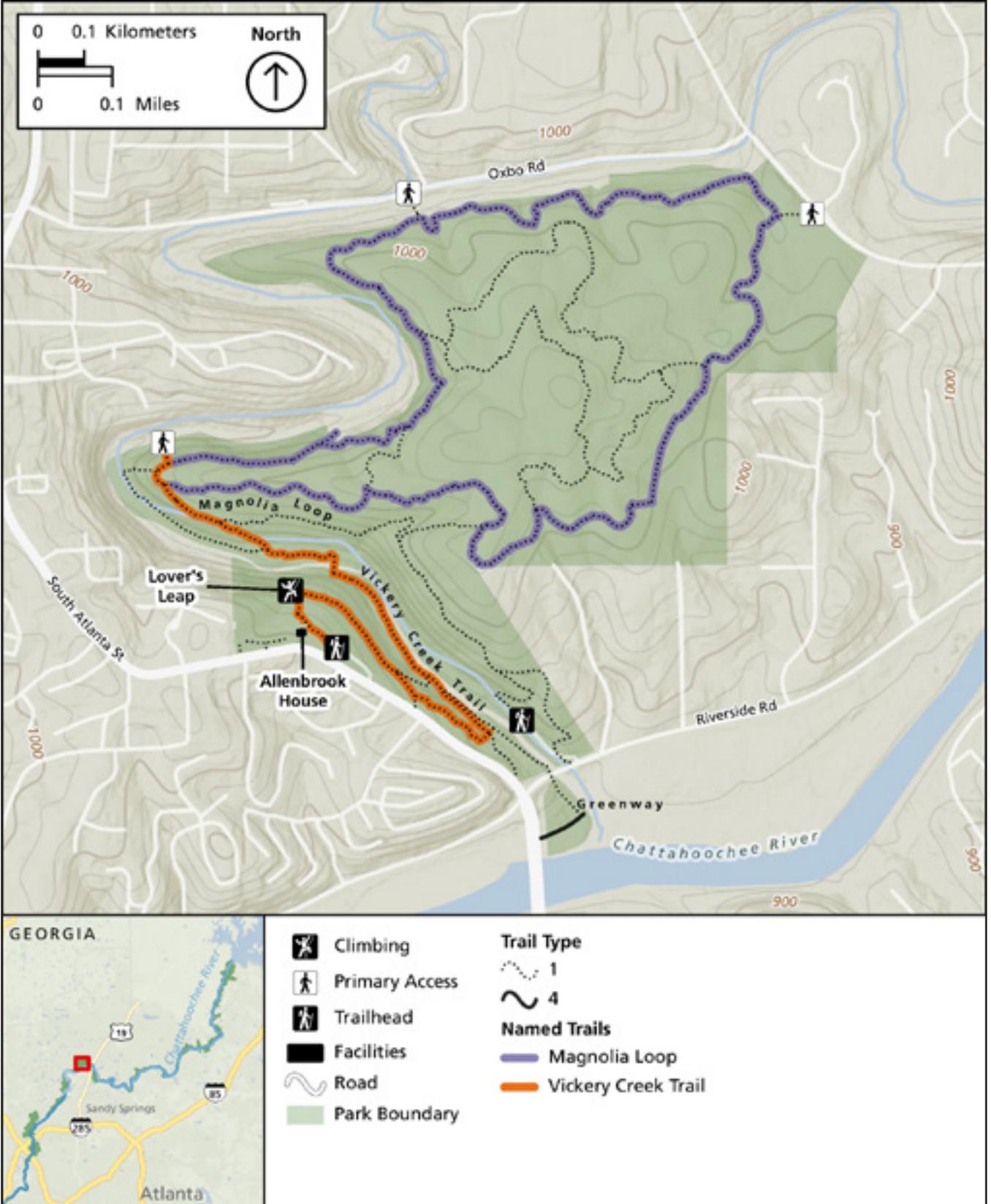


Figure B-32. Resultant Trail System, Alternative 2 – Vickery Creek

Gold Branch

Near-Term Actions:

- Remove rebar hazards.
- Remove or move debris piles.

Mid-Term Actions:

- Restore unsustainable trails and provide improved, contour-aligned routes that include longer loop opportunities. Undertake redevelopment of the trail system to reduce junctions and enhance the nature of the backcountry-style experience.
- Formalize streamside trails through full bench, rolling contour construction and the installation of grade reversals along streamside trails to better manage water.
- Install a viewing structure and harden water access routes at the trampled streamside site on the north end of the trail system.
- Install a bicycle rack and weir at the trailhead to accommodate visitors arriving via the Lower Roswell Trail and other popular pathways and bicycle routes. A sign on the rack would inform visitors that bicycles are prohibited in the unit.
- Expand the parking lot.
- Designate and develop any appropriate primary and secondary trail access points (these would be kept to a minimum).

Long-Term Actions:

- Decommission a redundant trailhead near the service road.

Visitor Capacity Management Strategies:

- Partner with local meetup groups to voluntarily redistribute use to off-peak times.
- Increase educational signage for proper dog behavior (e.g., keeping dogs leashed, bagging dog waste, the potential for harmful algal blooms).
- Pilot permitting for larger recreational groups if trail usage regularly exceeds visitor capacity.
- Increase parking enforcement for improperly parked vehicles.
- Monitor erosion on riverside trails and realign trails adaptively to prevent sloughing.

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Gold Branch

Chattahoochee River National Recreation Area, GA

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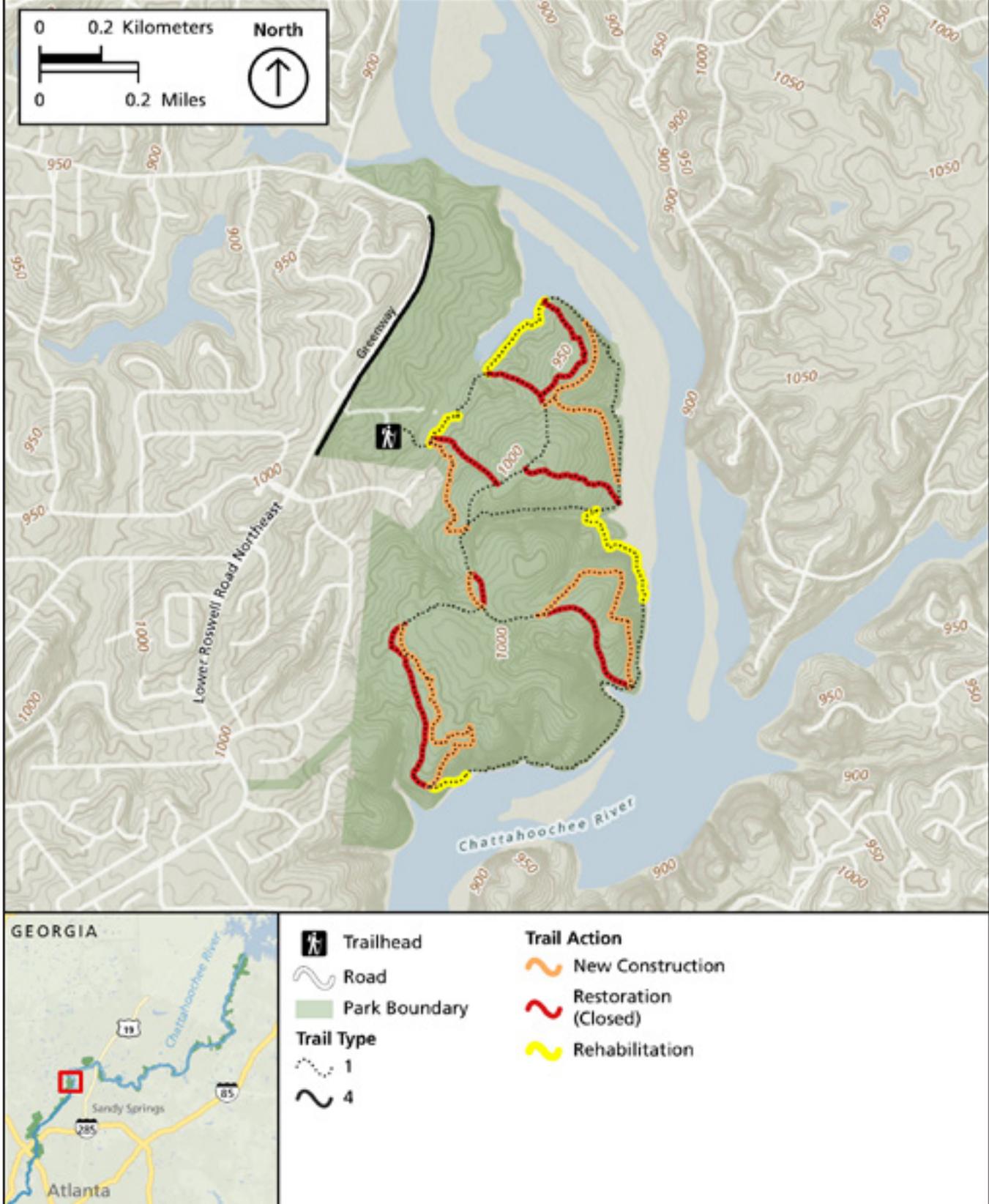
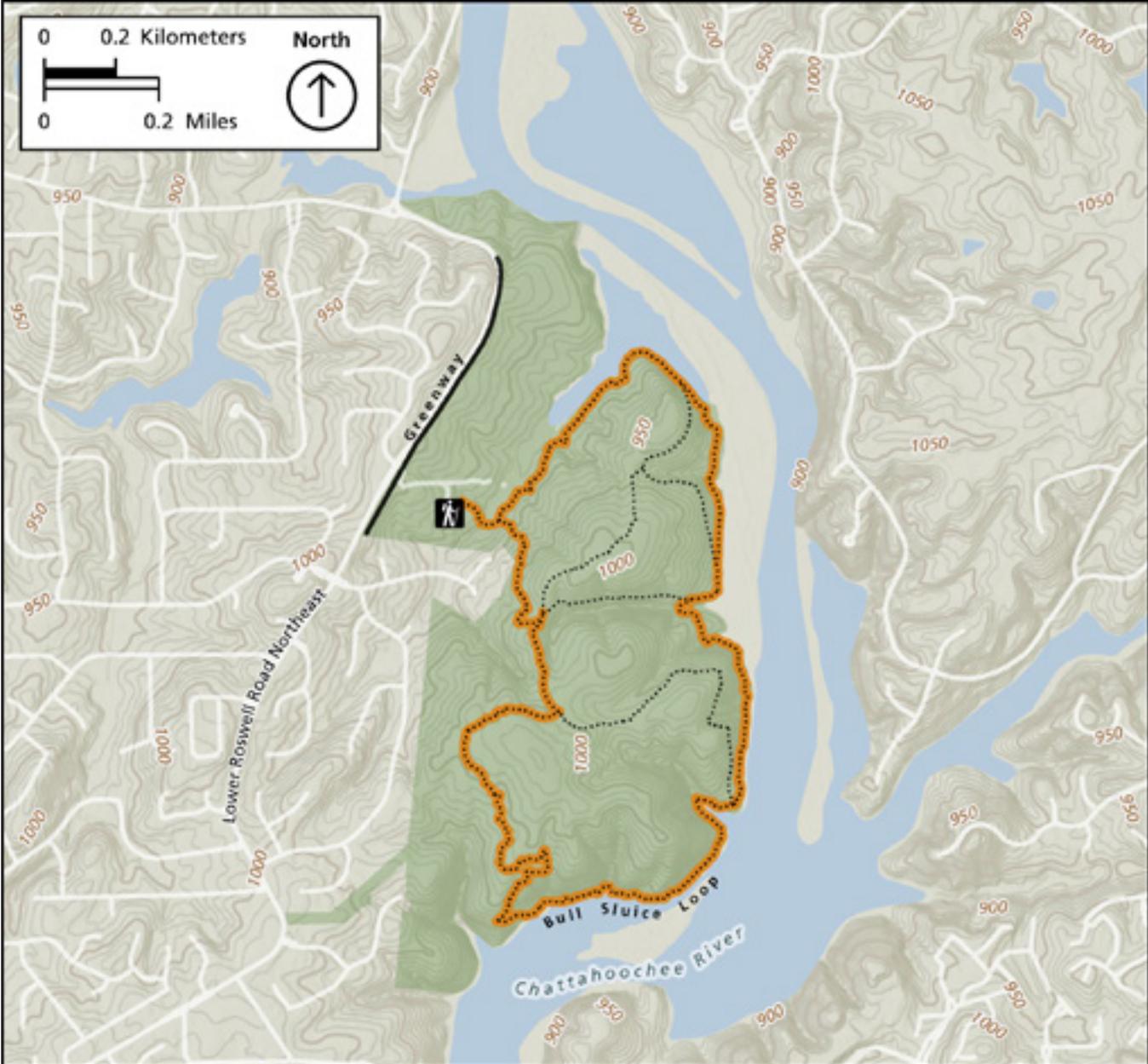


Figure B-33. Actions Associated with Alternative 2 – Gold Branch

Gold Branch Chattahoochee River National Recreation Area, GA

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Trailhead	Trail Type
Road	1
Park Boundary	4
	Named Trails
	Bull Sluice Loop

Figure B-34. Resultant Trail System, Alternative 2 – Gold Branch

Johnson Ferry

Near-Term Actions:

- Continue planning efforts for the Hyde Farm area.

Mid-Term Actions:

- Develop interpretive media and NPS mobile app information educating visitors about the wetland complexes visible from park trails in the southern portion of the unit.
- Restore the social trail connecting the northern loop of the Johnson Ferry South trail to Columns Drive.

Long-Term Actions:

- Continue to manage the trails and parking at Johnson Ferry South in their current condition.
- Promote the parking lot at Johnson Ferry South to provide overflow parking for the trail systems at Johnson Ferry North and Cochran Shoals (Columns Drive).

Visitor Capacity Management Strategies:

Johnson Ferry North:

- Promote this unit and its trail opportunities for its solitude experiences.
- Work with interpretation staff to direct visitors to this area.
- Educate the public that bicycles are not allowed in this unit.
- Install signs clearly explaining that bicycles are not allowed on these trails. Bicycles are only allowed on multiuse trails.
- Install signs clarifying the NPS boundary as one enters Hyde Farm.

Johnson Ferry South:

- While there is ample room for growth at Johnson Ferry South, the unit would not be actively promoted due to the quality of visitor experiences available there.
- Provide information about wetland resources at Johnson Ferry to enhance opportunities for enjoyment of this resource.
- Encourage use of Johnson Ferry South when the adjacent Johnson Ferry North and Cochran Shoals units are particularly busy.
- Install a security camera to address illegal dumping and other unauthorized activities in the parking lot.
- Collaborate with local jurisdictions to increase the frequency of law enforcement patrols at times when illegal visitor behavior is most common.

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Johnson Ferry South

Chattahoochee River National Recreation Area, GA

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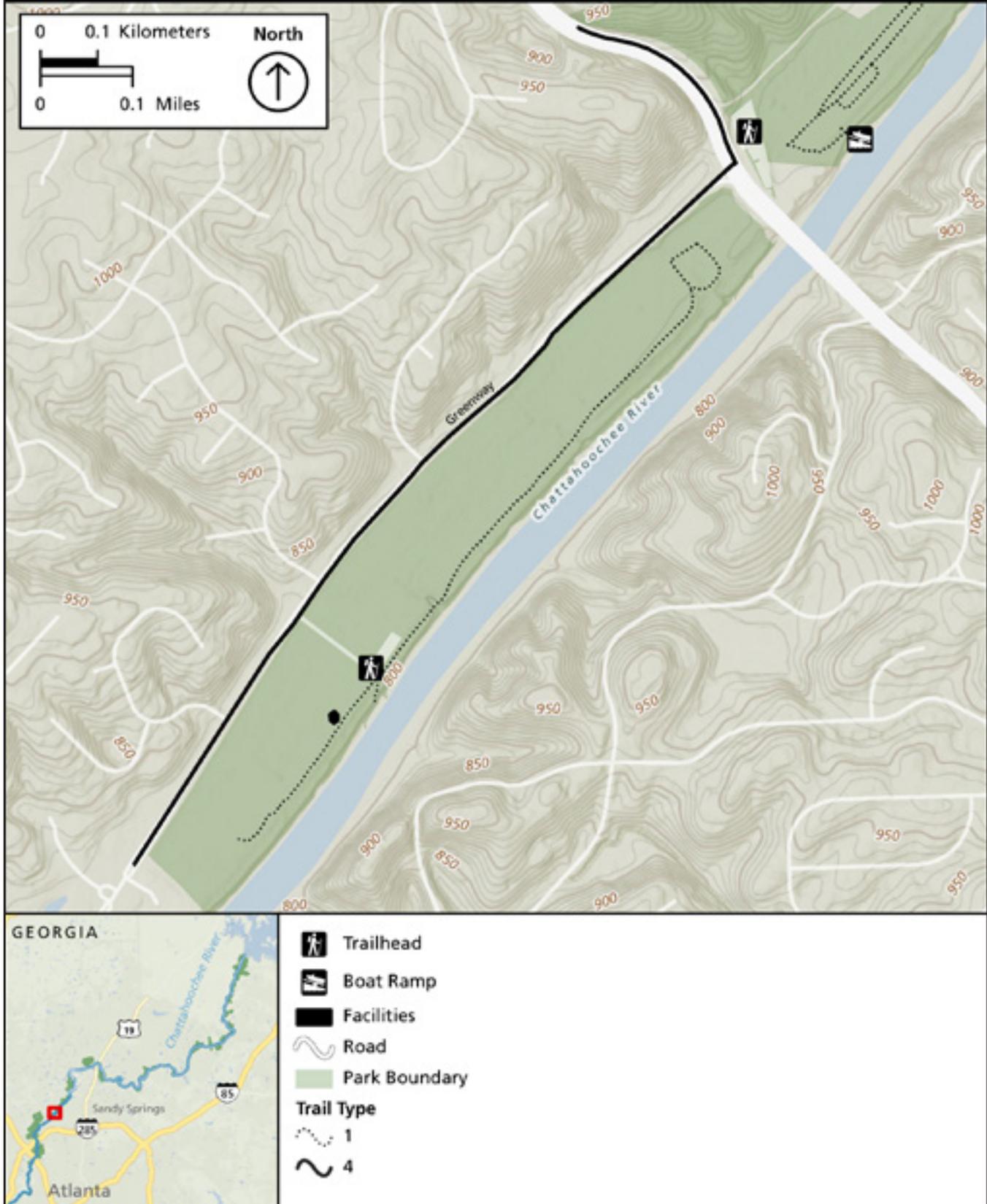
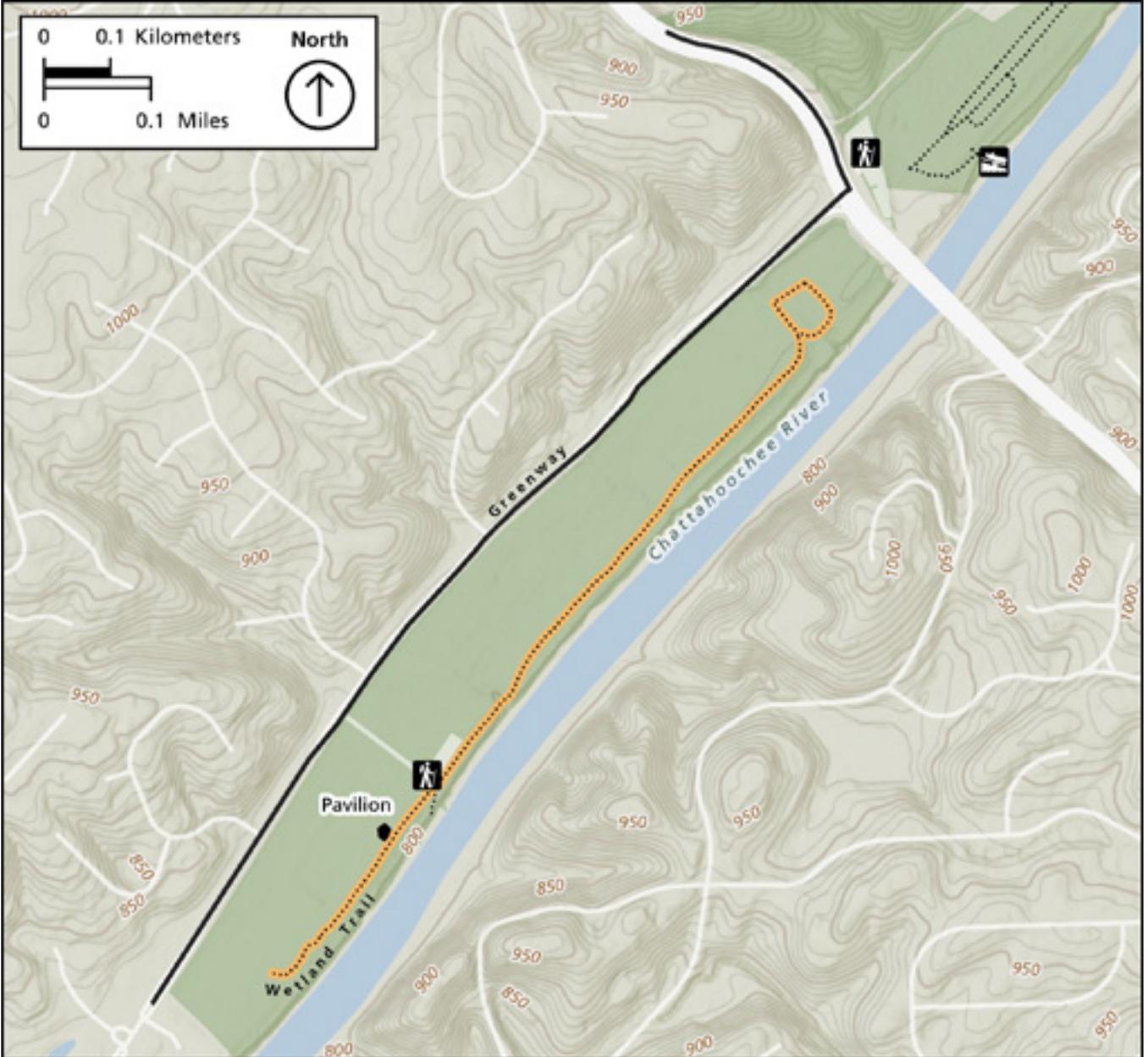


Figure B-35. Actions Associated with Alternative 2 – Johnson Ferry South

Johnson Ferry South Chattahoochee River National Recreation Area, GA

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Trailhead	Trail Type
Boat Ramp	1
Facilities	4
Road	Named Trails
Park Boundary	Wetland Trail

Figure B-36. Resultant Trail System, Alternative 2 – Johnson Ferry South

Cochran Shoals

Near-Term Actions:

- Establish a regime of grading the Fitness Loop to improve drainage and prevent potholes. Boardwalks in flood-prone areas could minimize trail creep.
- Designate and develop primary and secondary trail access points to address the significant unauthorized trail use in this area.
- Develop educational campaigns and leverage peer-to-peer education to improve compliance with leash laws, waste pickup, direction of travel, sharing the trail, and other regulations.
- Correct the inaccurate mileage markers along the Fitness Loop.
- Continue to issue special use permits for track and cross-country teams, run clubs, and other groups to prevent overuse, distribute impact, and provide education to these user groups.
- Reduce administrative vehicular traffic on the Fitness Loop through the increased use of bicycles or utility terrain vehicles.
- Allow electric bikes anywhere traditional nonmotorized bicycles are allowed consistent with the Superintendent's Compendium.
- Expand partnerships with biking and hiking organizations interested in helping with trail maintenance and restoration.
- Near the Sope Creek Trailhead, raise and resurface the trail tread around Sibley Pond. Develop a universally accessible (type 3) trail from the Sope Creek Trailhead to the interpretive sign above the Marietta Paper Mill foundation.
- At Powers Island, inspect bridge footings and reset if necessary. Remove ineffective maintenance structures on the southern leg of the upland trail.
- At Powers Island, use natural barriers to discourage social trailing.

Mid-Term Actions:

- In the Powers Island area, restore unsustainable trails and provide an improved, contour-aligned trail loop through the rock outcrops near the northern terminus of the floodplain route that climbs to the upper elevations of the property, connects formally to the surrounding neighborhood and office park, and descends back to the paved trailhead parking area.
- At Columns Drive, expand the size of the parking infrastructure to accommodate vehicles.
- At Gunby Creek, restore unsustainable trails and provide an improved, contour-aligned system attractive to nature walkers, birders, and botanical societies who visit for the large diversity of native and rare plants as well as trail runners, track teams, lunch walkers, and other groups. Develop one bicycle route to access the Fitness Loop from this area.
- In the Sope Creek and Fitness Loop areas, restore unsustainable trails and provide an improved, contour-aligned system that maximizes the separation of bicycle use from other user groups.
- The Fitness Loop may be designated a part of the potential greenway. No change would occur to the design or use of the Fitness Loop.

Long-Term Actions:

- Explore improved connections to the Rottenwood Creek pathway.

Visitor Capacity Management Strategies:

Sope Creek, Gunby Creek, and the Fitness Loop:

- Emphasize the use of the text-for-status program so visitors know when trails are open to biking.
- Continue to educate visitors on why trails are closed and why they need to stay off trails after rain events.

- Formalize a bicycle volunteers in parks program to educate visitors on where and when it is appropriate to ride (i.e., not after rain events or on trails closed to bicycles).
- Increase roving, uniformed active engagement to help relay educational messages to the public. A visitor use assistant or volunteer could continue to walk the trails as well.
- Increase education around fee compliance to help support park operations in this area.
- Consider additional areas for river overlooks to reduce erosion issues related to informal access points. Add overlooks as needed.
- Consider additional areas for river access points to reduce erosion issues related to informal access points. Add access points as needed.
- Consider adjusting the current bicyclist/pedestrian system from a directional system to bicycle-only days and pedestrian-only days or separating pedestrian use from bicycle use on the current multiuse trail system.
- higher use when in contact with visitors.
- Post signs indicating parking is at capacity (return at a later, designated time).
- Use innovative technology or methods to communicate with the public about other opportunities that are available to them in or outside of the park.
- Designate some short-term parking spaces at key locations to ensure that a variety of people can visit the site over a day and use levels stay within the thresholds.
- Provide real-time information regarding parking and access opportunities (e.g., text alerts and radio station updates).
- Deploy intelligent transportation systems to provide visitors with information about parking lot status. This information would be conveyed to visitors before and/or upon entry to the frontcountry.
- Consider a temporary queuing system until more vehicles leave the area. Actions might include turning vehicles away.

Powers Island:

- Where possible, encourage visitors to use sites that can handle high volumes of use during peak use times.
- Use press releases/media before historically crowded weekends to prepare the public for crowds.
- Increase maps and signage about various destinations in and outside of highly developed sites.
- Provide information to visitors about sites that are likely to be busy so they know of those conditions before they arrive.
- Increase education and signage about parking in designated areas.
- Increase education and information during peak times about where to find available parking.
- Display information on park websites or social media, and direct park staff to communicate about areas that accommodate

Cochran Shoals - Sope Creek Trailhead

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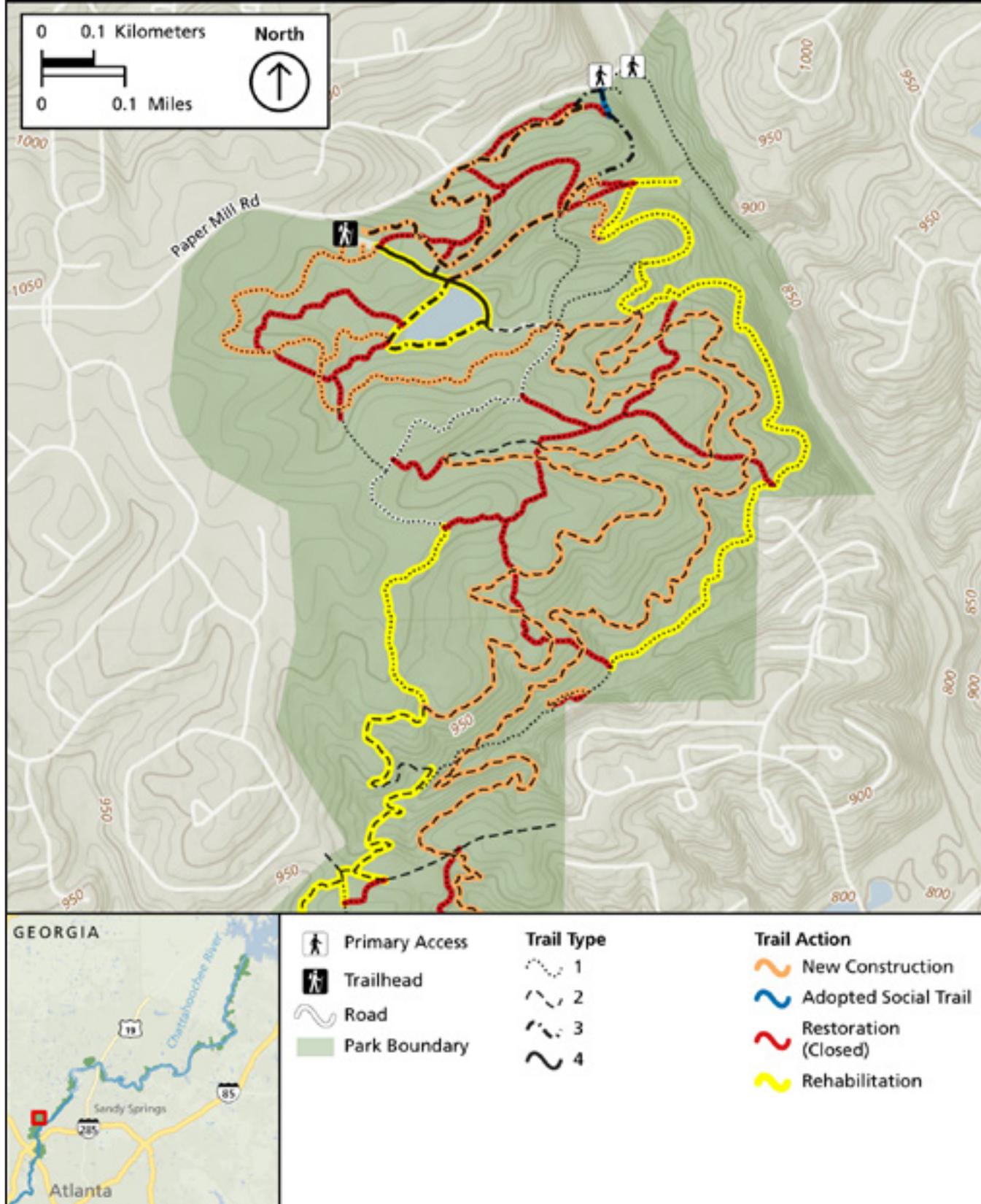


Figure B-37. Actions Associated with Alternative 2 – Cochran Shoals, Sope Creek Trailhead

Cochran Shoals - Sope Creek Trailhead

Chattahoochee River National Recreation Area, GA

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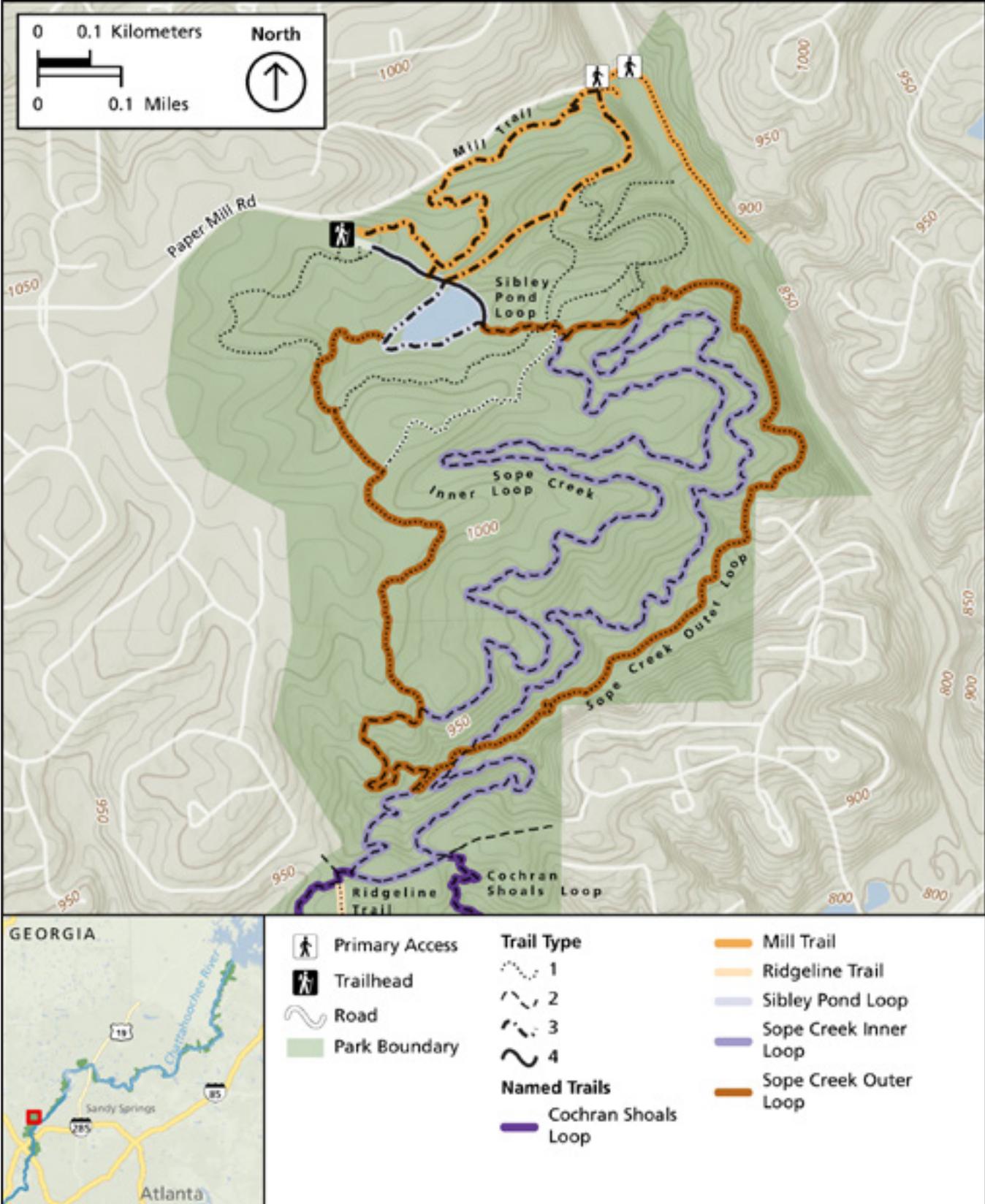


Figure B-38. Resultant Trail System, Alternative 2 – Cochran Shoals, Sope Creek Trailhead

Cochran Shoals - Columns Drive Trailhead

Chattahoochee River National Recreation Area, GA

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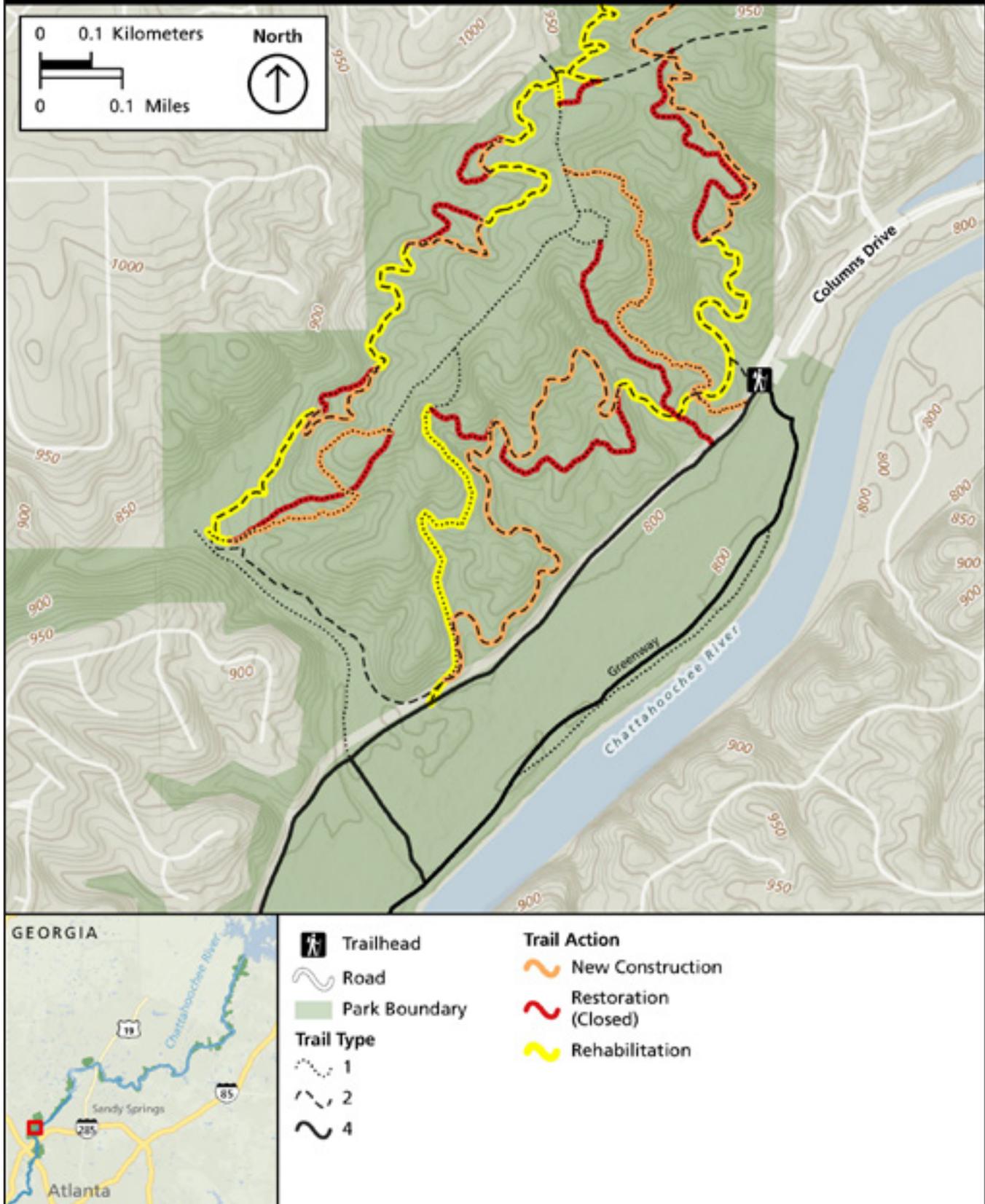
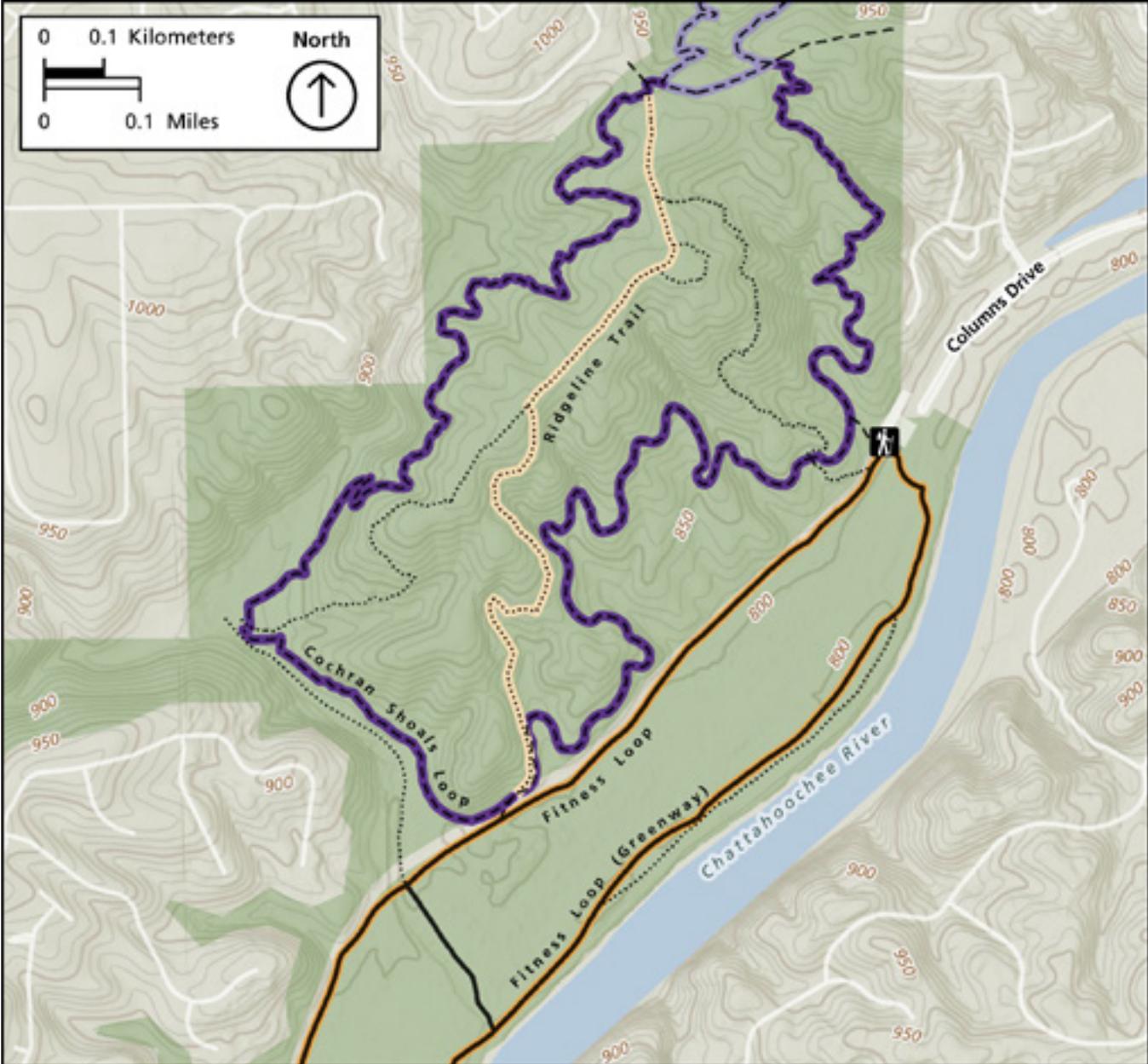


Figure B-39. Actions Associated with Alternative 2 – Cochran Shoals, Columns Drive Trailhead

Cochran Shoals - Columns Drive Trailhead

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Trailhead	Named Trails
Road	Cochran Shoals Loop
Park Boundary	Fitness Loop
Trail Type	Ridgeline Trail
1	Sope Creek Inner Loop
2	
4	

Figure B-40. Resultant Trail System, Alternative 2 – Cochran Shoals, Columns Drive Trailhead

Cochran Shoals - Interstate N/Powers Island

Chattahoochee River National Recreation Area, GA

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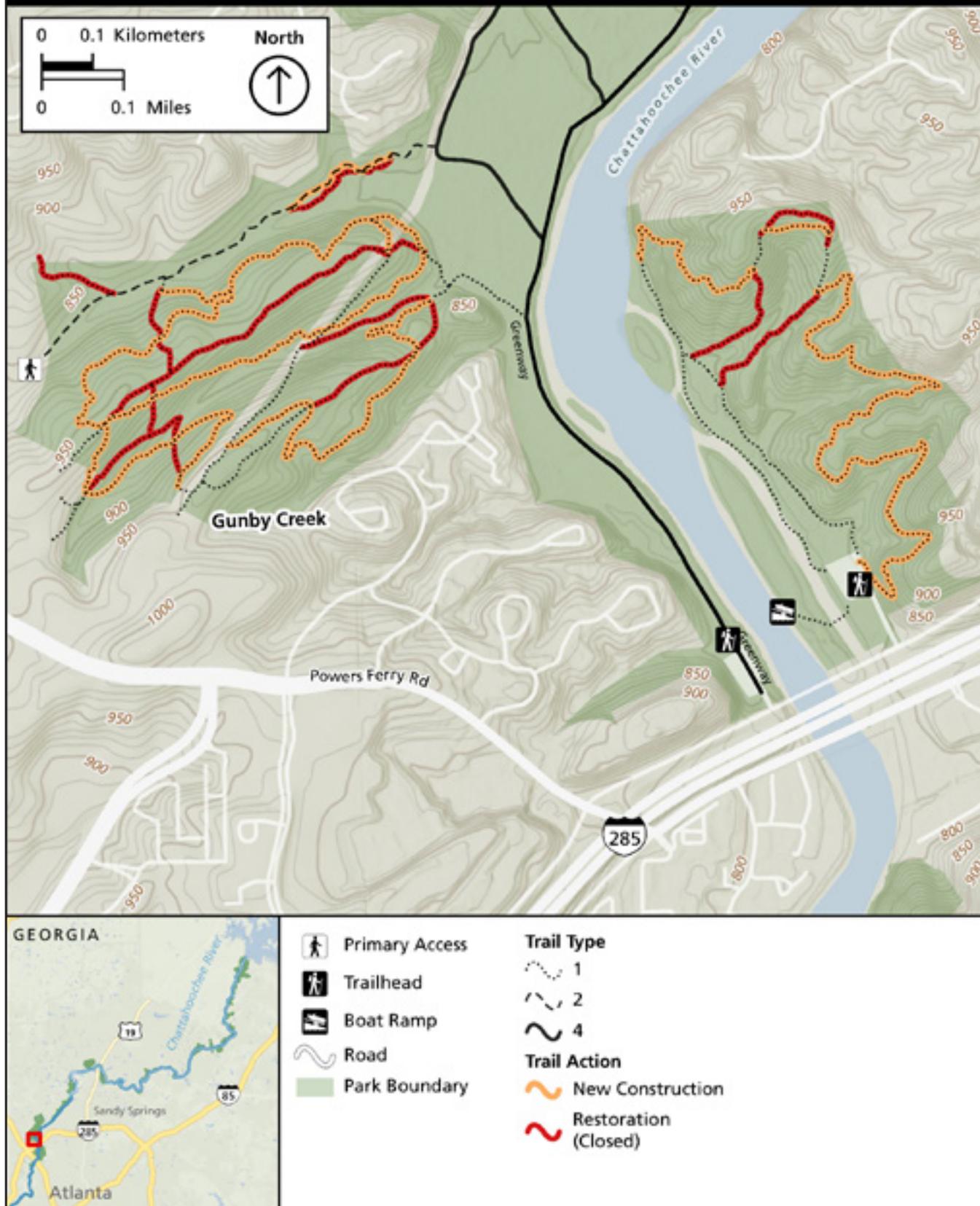
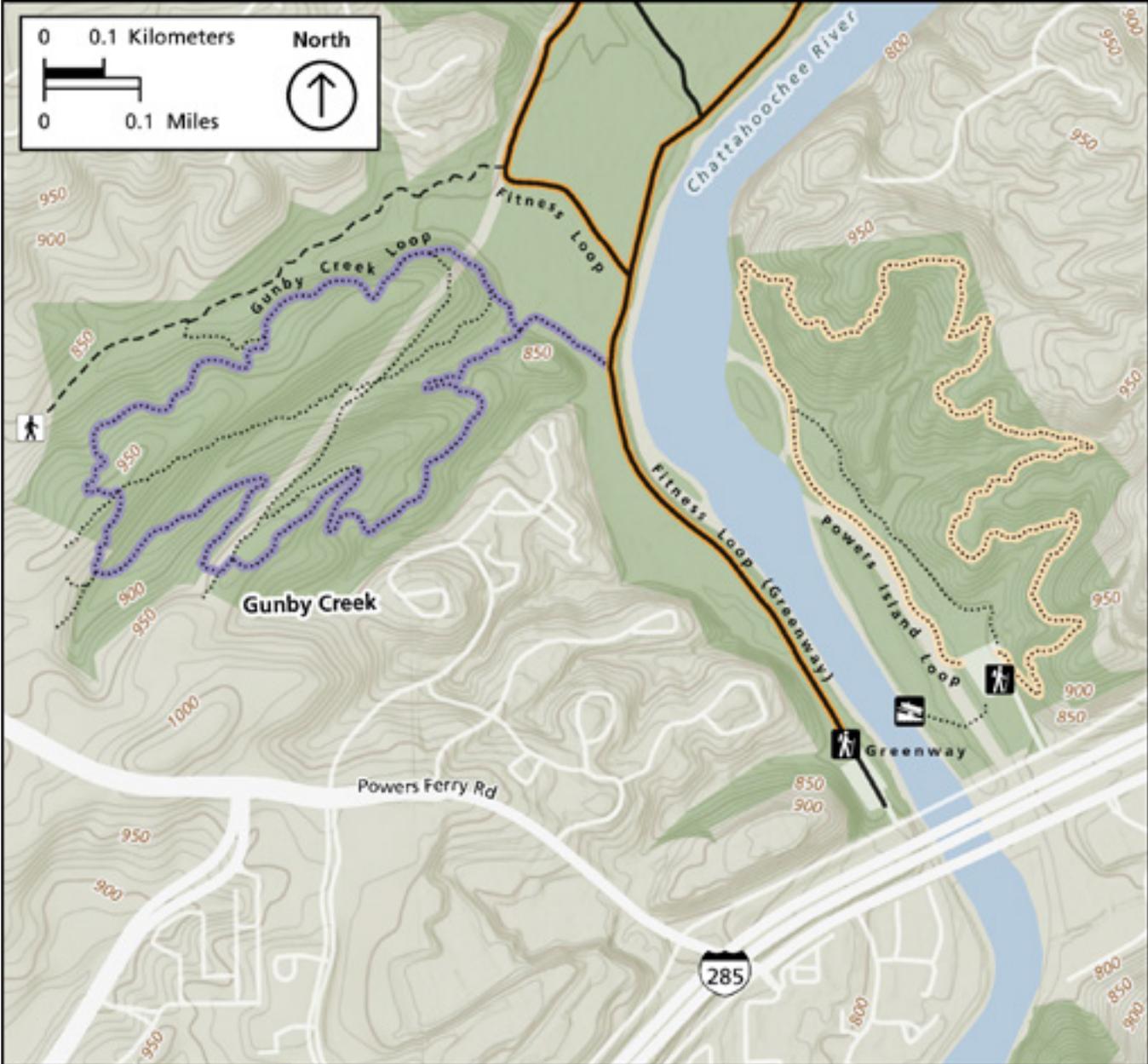


Figure B-41. Actions Associated with Alternative 2 –Cochran Shoals, Interstate North/Powers Island

Cochran Shoals - Interstate N/Powers Island Chattahoochee River National Recreation Area, GA

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Primary Access	Trail Type
Trailhead	1
Boat Ramp	2
Road	4
Park Boundary	Named Trails
	Fitness Loop
	Gunby Creek Loop
	Powers Island Loop

Figure B-42. Resultant Trail System, Alternative 2 – Cochran Shoals, Interstate North/Powers Road

Palisades

Near-Term Actions:

- Improve access and parking at the Indian Trailhead.
- Improve trail information accessibility and wayfinding, particularly associated with parking options, access, and inappropriate parking along Riverside Road.
- Improve wayfinding and establish a trail connection to the bamboo stand. Designate the area as a “quiet area.”
- Begin to replace bridges and puncheons that are nearing the end of their life cycle.
- Designate and develop primary and secondary trail access points.

Mid-Term Actions:

- Restore unsustainable trails and provide an improved, contour-aligned system.
- Implement a phased trail redevelopment and environmental restoration process, coupled with public education and peer-to-peer assistance in changing visitor behaviors and attitudes.
- Develop a partnership to play a maintenance role on the hiking trails.
- Explore installing wayside exhibits and passive interpretation of nearby cultural resources along the Rottenwood Creek Trail.
- Establish a comprehensive trail system that highlights the granite outcrops, cultural resources, and native plant species.
- Designate the Rottenwood Creek Trail as part of the potential greenway. No change would occur to the design or use of the Rottenwood Creek Trail.

Long-Term Actions:

- Explore the feasibility of a pedestrian river crossing to bridge east and west Palisades.

Visitor Capacity Management Strategies:

Palisades East:

- Where possible, encourage visitors to use sites that can handle high volumes of use during peak use times.
- Use press releases/media before historically crowded weekends to prepare the public for crowds.
- Increase maps and signage about various destinations in and outside of highly developed sites.
- Provide information to visitors about sites that are likely to be busy so they know of those conditions before they arrive.
- Increase education and signage about parking in designated areas.
- Increase education and information during peak times about where to find available parking.
- Display information on park websites or social media, and direct park staff to communicate about areas that accommodate higher use when in contact with visitors.
- Increase enforcement of parking outside of designated areas.
- Post signs indicating parking is at capacity (return at a later, designated time).
- Use innovative technology or methods to communicate with the public about other opportunities that are available to them in or outside of the park.
- Designate some short-term parking spaces at key locations to ensure that a variety of people can visit the site over a day and use levels stay within the thresholds.
- Provide real-time information regarding parking and access opportunities (e.g., text alerts and radio station updates).
- Deploy intelligent transportation systems to provide visitors with information about parking lot status.

- Consider a temporary queuing system until more vehicles leave the area. Actions might include turning vehicles away.

Palisades West:

- Where possible, encourage visitors to use sites that can handle high volumes of use during peak use times.
- Increase public education efforts to encourage voluntary redistribution of use to off-peak times.
- Use press releases/media before historically crowded weekends to prepare the public for crowds.
- Increase maps and signage about various destinations in and outside of highly developed sites.
- Provide information to visitors on sites that are likely to also be busy so they know of those conditions before they arrive.
- Increase education and signage about parking in designated areas.
- Increase education and information during peak times about where to find available parking.
- Display information on park websites or social media, and direct park staff to communicate about areas that accommodate higher use when in contact with visitors.
- Increase enforcement of parking outside of designated areas.
- Post signs indicating parking is at capacity (return at a later, designated time).
- Use innovative technology or methods to communicate with the public about other opportunities that are available to them in or outside of the park.
- Designate some short-term parking spaces at key locations to ensure that a variety of people can visit the site over a day and use levels stay within the thresholds.

- Provide real-time information regarding parking and access opportunities (e.g., text alerts and radio station updates).
- Deploy intelligent transportation systems to provide visitors with information about parking lot status. This information would be conveyed to visitors before and/or upon entry to the frontcountry.
- Consider a temporary queuing system until more vehicles leave the area. Actions might include turning vehicles away.

Palisades North

Chattahoochee River National Recreation Area, GA

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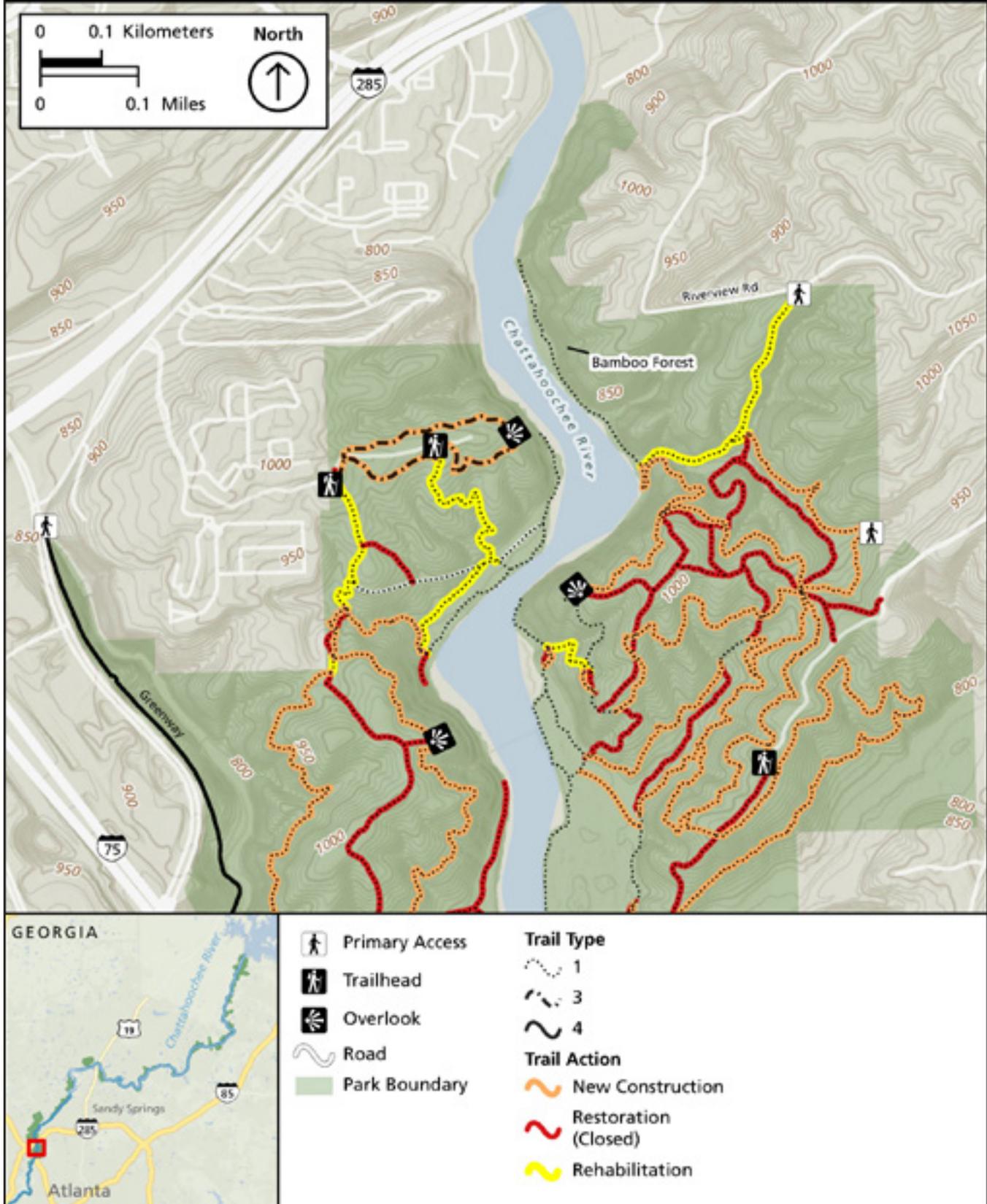


Figure B-43. Actions Associated with Alternative 2 – Palisades North

Palisades North

Chattahoochee River National Recreation Area, GA

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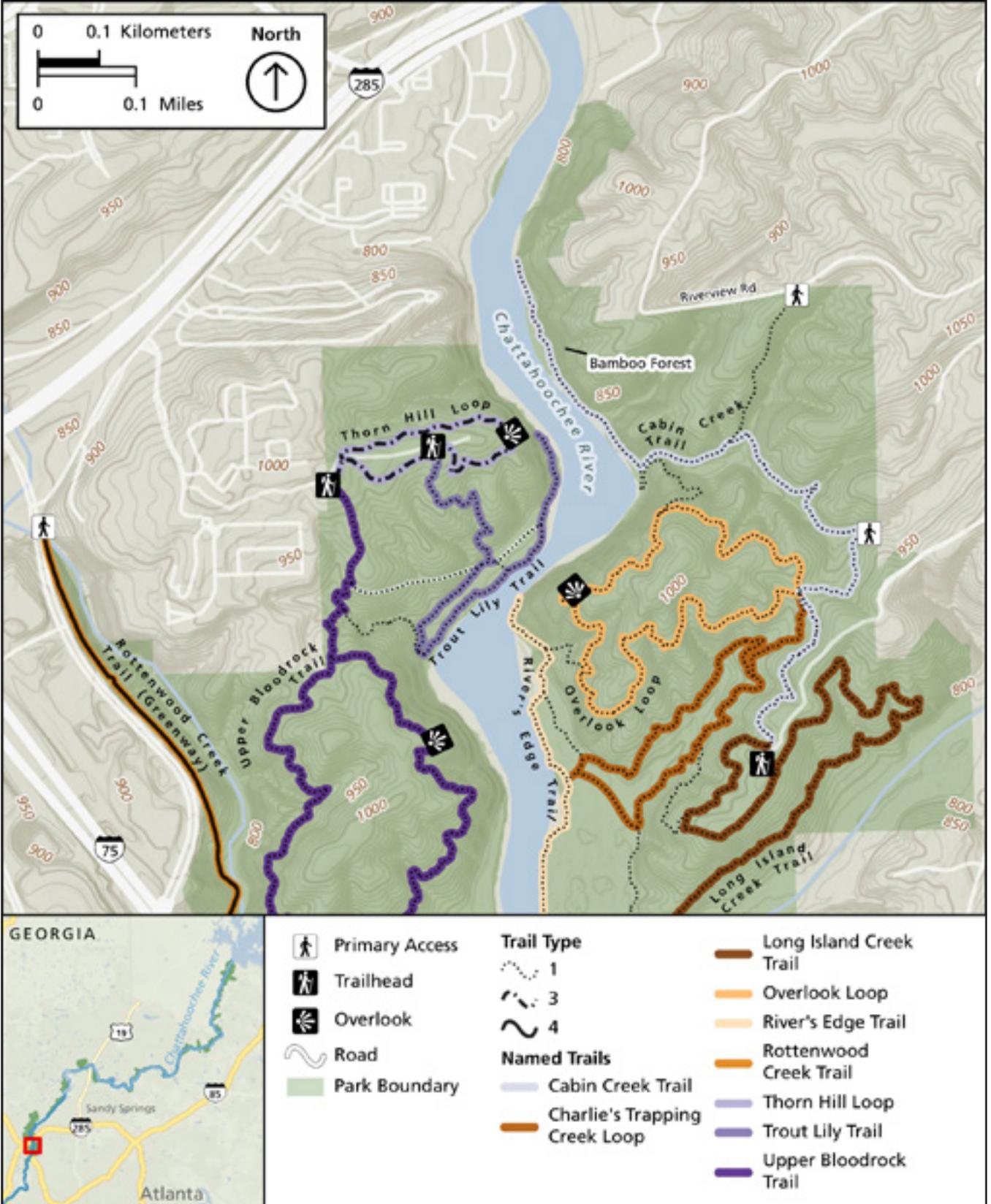


Figure B-44. Resultant Trail System, Alternative 2 – Palisades North

Palisades South

Chattahoochee River National Recreation Area, GA

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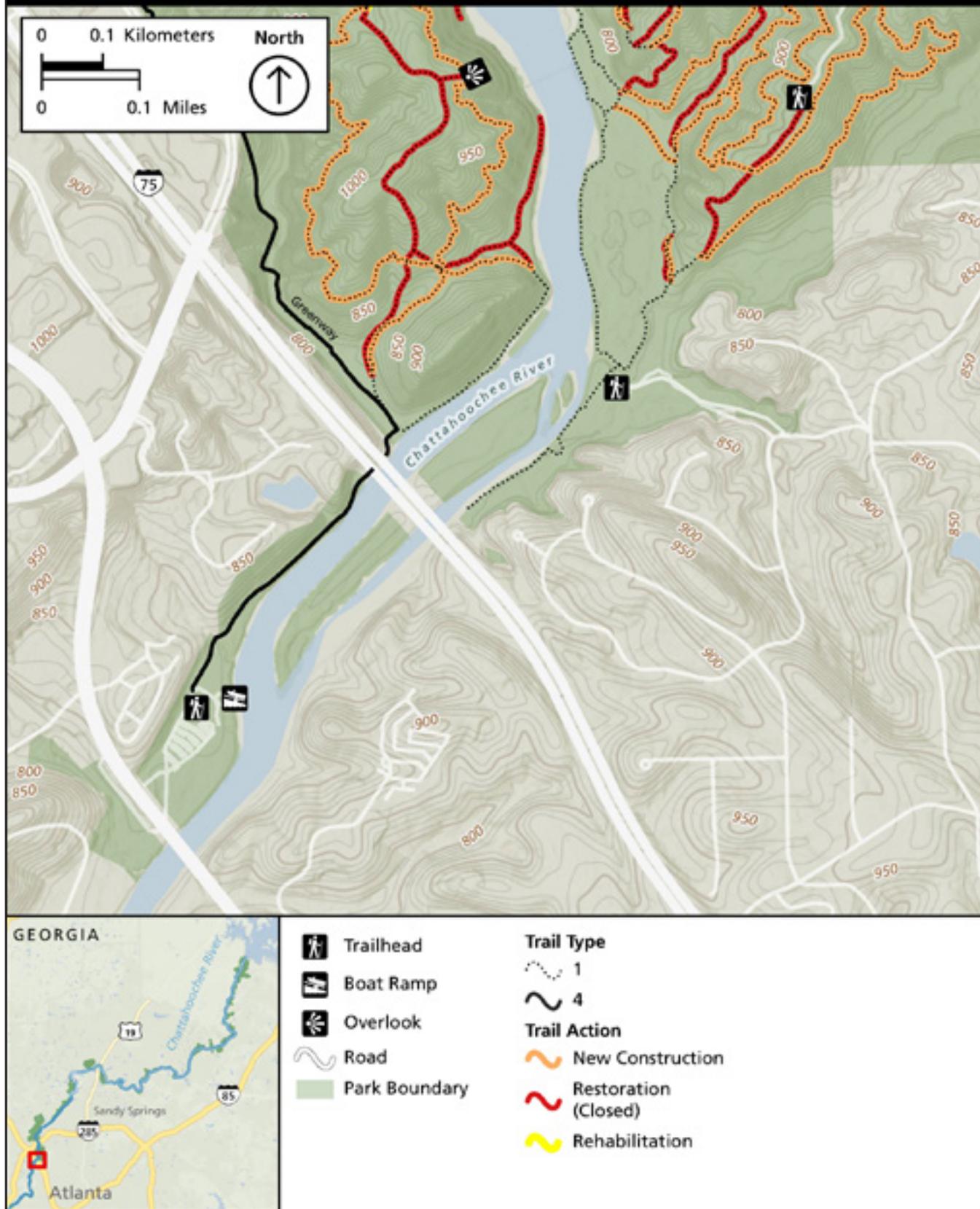
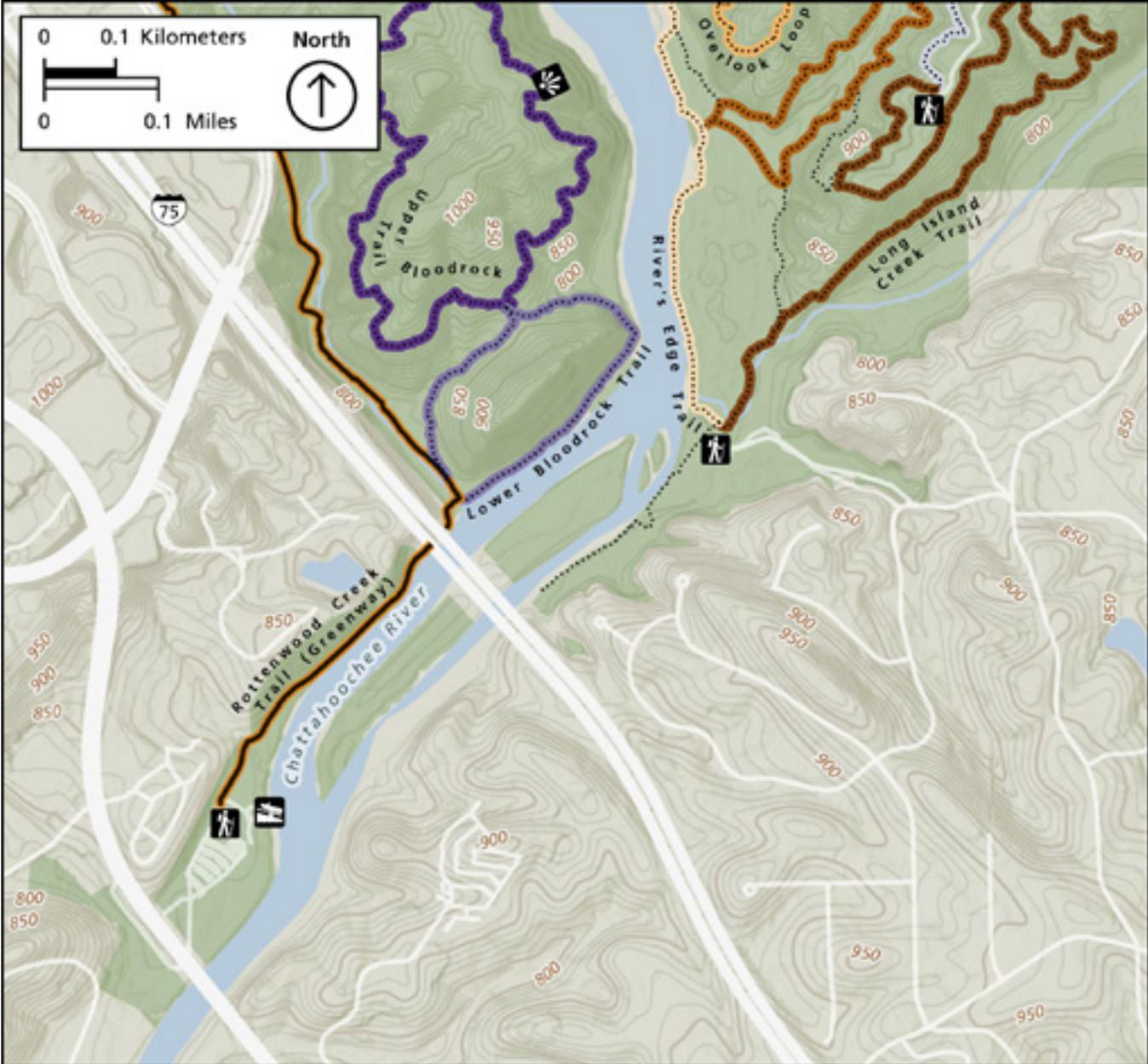


Figure B-45. Actions Associated with Alternative 2 – Palisades South

Palisades South

Chattahoochee River National Recreation Area, GA

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Trailhead	Trail Type	Lower Bloodrock Trail
Boat Ramp	1	Overlook Loop
Overlook	4	River's Edge Trail
Road	Named Trails	Rottenwood Creek Trail
Park Boundary	Cabin Creek Trail	Upper Bloodrock Trail
	Charlie's Trapping Creek Loop	
	Long Island Creek Trail	

Figure B-46. Resultant Trail System, Alternative 2 – Palisades South

Appendix C: Trail Types

Trail Attributes	Trail Type 1A*	Trail Type 1B*	Trail Type 2	Trail Type 3	Trail Type 4
Style	Natural surface pedestrian trail	Natural surface pedestrian trail	Natural surface multiuse trail	Universal access trail	Aggregate multiuse trail
Allowable Uses	Pedestrian only	Pedestrian only	Pedestrian and cyclists	Pedestrian only	Pedestrian and cyclists
Trail Width	1–2 feet	2–4 feet*	4–8 feet typical	3–8 feet	8–10 feet typical
Specific GMP Zone(s), if applicable	Natural Zone, Rustic Zone, Historic Resource Zone, and Rustic Zone	Natural Area Recreation Zone and Developed Zone	Natural Area Recreation Zone and Developed Zone	Natural Area Recreation Zone and Developed Zone	Natural Area Recreation Zone and Developed Zone
Tread Surface/Material	Natural native soils, surfaced as needed for hardening with natural native materials such as stone, rock, or wood	Natural native soils, surfaced as needed for hardening with natural native materials such as stone, rock, or wood	Natural native soils, surfaced as needed for hardening with natural native materials such as stone, rock, or wood	Crushed aggregate. boardwalk; brick/masonry/porous pavers	Crushed aggregate. boardwalk; brick/masonry/porous pavers
Special Structures	Structures where protection of resources are needed, including: boardwalks; stairs; foot bridges	Structures where protection of resources are needed, including: boardwalks; stairs; foot bridges	Structures present and substantial. Trail infrastructure meets ABA requirements. Substantial trail bridges are used at water crossings. Drainage structures are present. Curbing could be used to retain aggregate and control braiding.	Structures present and substantial. Trail infrastructure meets ABA requirements. Substantial trail bridges are used at water crossings. Drainage structures are present. Curbing could be used to retain aggregate and control braiding.	Structures present and substantial. Trail infrastructure meets ABA requirements. Substantial trail bridges are used at water crossings. Drainage structures are present. Curbing could be used to retain aggregate and control braiding.

Trail Attributes	Trail Type 1A*	Trail Type 1B*	Trail Type 2	Trail Type 3	Trail Type 4
Signage	Kiosks; loops and trails marked with distances and difficulty. Limited interpretive signage.	Kiosks; loops and trails marked with distances and difficulty. Limited interpretive signage.	Kiosks; loops and trails marked with distances and difficulty. Limited interpretive signage.	Informational and directional signage along the trail will meet Harpers Ferry Center's accessibility guidelines for park signage. Loops and trails marked with distances.	Kiosks; signage must have ABA accessible symbols and total length of accessible trail. Loops and trails marked with distances.

*Trail type 1 as related to GMP zoning: Variation based on GMP zones exists in type 1 trails. This variation is based on zoning and related to desired experience and visitor capacity (i.e., trail type 1B is appropriate in zones with expectations for more social experiences and higher visitor use).

Appendix D: Indicators and Thresholds

Monitoring on Chattahoochee River National Recreation Area's trail system would be accomplished through the establishment of "indicators" and "thresholds." Indicators are specific resource or experiential attributes that can be measured to track changes in conditions so that progress toward achieving and maintaining desired conditions can be assessed. In this way, indicators translate the desired conditions of the plan into something that can be tracked over time to evaluate its effectiveness. Indicators help identify when a level of impact becomes cause for concern and when management action may be needed.

To identify the most useful indicators for monitoring the effectiveness of the plan, the planning team considered ongoing monitoring efforts; issues affecting natural resources, cultural resources, and visitor use and experience of the park's trails; and the trail system's desired conditions. After identifying issues that most affected the trail system's ability to achieve desired conditions, the team identified indicators related to those issues.

Thresholds represent the minimum acceptable condition for each indicator and were established by considering the qualitative descriptions of desired conditions, information on existing conditions, staff management experience, best practices from across the national park system, and public feedback received during civic engagement. Although defined as "minimally acceptable," thresholds still represent acceptable conditions. In addition, establishing thresholds does not imply that no action would be taken before reaching the threshold. Thresholds identify when conditions reach unacceptable levels and accordingly serve as a proverbial "line in the sand," letting managers and the public know that corrective action must be taken to keep conditions acceptable.

Together, indicators and thresholds provide park managers with a monitoring framework to ensure desired conditions for resources and visitor experiences are achieved and maintained over time. These are a critical component of the Visitor Use Management (VUM) framework and are considered part of the action alternative.

The planning team considered many potential indicators, but ultimately identified seven that are the most important to monitor the effectiveness of the trails management plan. The five issues or topics the indicators monitor include:

- Trail condition
- Social trailing
- Roadside parking
- Cultural resource impacts
- Visitor conflicts

Visitor use management is an iterative process in which management direction is continuously informed by new information and improved. Indicators are monitored, and adjustments are made as appropriate. As monitoring gets underway, park 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 NPS monitoring efforts, related visitor use management actions, and any changes to the indicators and thresholds would be available to the public as appropriate.

The following are detailed descriptions of the indicators and thresholds along with rationales for why the indicator was selected, monitoring protocols, and management strategies that may be used. Several of these management strategies are currently in use and may be increased in response to changing conditions. Other management strategies would be implemented upon completion of the plan to ensure

conditions do not approach thresholds. Further management strategies would be implemented if and when monitoring indicates that conditions are changing and thresholds are being approached or exceeded. The impacts of these management strategies are analyzed in chapter 3. Details of any management strategies identified as “potential” would be developed at the time they are needed to ensure that the most effective approach is implemented.

The following management strategies apply to more than one of the indicators. Management strategies that are specific to each indicator are listed under their respective indicators.

- Conduct an outreach campaign to encourage visitors to visit lower-use trails and visit popular units at lower-use times.
- Manage group size at appropriate locations by enforcing special use permit requirement (groups larger than 35 require a permit).
- Increase visitor education (as part of Leave No Trace messaging) about the importance of staying on designated trails to protect park resources (i.e., vegetation, soils, and water). Highlight the impacts including vegetation trampling, soil compaction, erosion, and trail widening.
- Display information about high-use times on park websites or social media, and direct park staff to communicate areas that accommodate higher use when in contact with visitors.

Indicator Topic: Trail Conditions

The topic of trail conditions includes two indicators: change in trail width and presence of cross-slope on trails, as described below.

.....
Indicator: Change in trail width

Threshold: Trail width increases no more than 25% from baseline conditions and does not exceed maximum trail width defined for its trail class and zone (see appendix F).

.....
Rationale for Indicator and Threshold: This indicator measures change in the width of the trail tread as compared to baseline conditions and the maximum trail width defined for its trail class and zone. Baseline conditions are established when the width is first measured as part of the monitoring strategy, while the trail width standards are defined for each trail class and zone (see appendix F). The threshold is a 25% increase in trail width from baseline conditions or the maximum width allowed for its trail class and zone, whichever is less.

High levels of visitor use on trails contributes to trail widening as users pass one another and avoid wet spots. As more visitors use a trail, especially during and after rain events, the trail tends to become wider as visitors route themselves around puddles and mud. Larger groups of people using the trail together has a greater impact on increasing trail width as these groups often travel side by side. The impacts of these behaviors and patterns can readily be seen on the ground as trailside vegetation is trampled and the trail widens to incorporate formerly vegetated areas.

This indicator is closely related to soil erosion, soil compaction, water quality, and vegetation trampling. Monitoring trail width is also important to the plan, as it helps achieve two of its goals—to “increase trail lifespan and minimize maintenance needs” and “protect park resources and limit impacts from increased trail use.” Growing and eroding trails require more trail maintenance. They also contribute to bankside erosion and soil runoff that enters the park’s river and streams and contributes to water turbidity. Popular destinations for spring wildflower viewing have been lost due to trail widening, impacting the quality of visitors’ experience and resources. Monitoring and managing trail width is important to ensuring the physical and managerial sustainability of the trail system.

.....
Monitoring Strategy: A representative selection of sites along a trail or trails would be identified in each unit of the park for quarterly sampling. Sampling each season would allow for sufficient time for change to take place, while still being frequent enough to be sensitive to change. Sensitive resource areas that receive high levels of use would be targeted for sampling.

To make the monitoring effort reasonable, park facilities staff would enter the times and GPS locations of each trail site that needs to be monitored into the work order system to ensure this monitoring occurs as a part of routine operations. Once entered in the tracking system, the monitoring work could be shared with volunteer site stewards assigned to each unit who are already doing trail monitoring. Park staff would also contribute to the effort as their availability allows. Use of standard protocols and tools, including laser measuring tools or tape measures and precise GPS locations, would contribute to the consistency and reliability of the data collected.

.....
Management Strategies Specific to this Indicator:

- Encourage visitors to travel single-file or with an appropriate number of people abreast to prevent trail widening.
- Increase the use of a text-for-status system to educate visitors about appropriate times to bicycle on trails to prevent use after rain.
- When trail widening occurs on a specific stretch of trail, schedule a trail day with a volunteer trail crew to address vegetation and soil impacts by decompacting and revegetating. Prioritize maintenance on trails that are widening the most.
- Improve drainage (e.g., grade reversals, cross-slope) on trails that are widening so that visitors do not have to travel around wet spots.
- Rehabilitate trails that exceed the width threshold as soon as possible to discourage further widening.

- Construct definitive trail edges along widening trails using natural or human-made materials such as fencing, rocks, logs, or other appropriate physical barriers. In order to maintain positive sheet flow, the type and location of trail edges may vary based on the trail type. For example, crowned aggregate trails would be better candidates for definitive trail edges. Likewise, large rocks, which allow for drainage, would be better candidates for the edges than a log, which obstructs drainage.
- Include trail anchors, chokes, or gateways to define the sides of the trail and discourage widening. Possible solutions include large rocks, logs, trees, or other obstacles staggered on either side of the trail that serve as physical and visual barriers to keep users on the trail.
- Install boardwalks or other form of elevated trail construction where trails widen in low, wet areas that cannot be rerouted or given drainage solutions.
- Incorporate periodic widened “passing areas” along trails at convenient resting intervals and points of interest.
- Temporarily close select trails after trail maintenance has occurred to allow decompaction and revegetation efforts to take hold and allow trailside soils to stabilize.

.....
Indicator: Presence of cross-slope on trails

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Threshold: At least 95% of surveyed trails have cross-slope and positive drainage.

.....
Rationale for Indicator and Threshold: The rationale for the “presence of cross-slope on trails indicator is largely the same as the “change in trail width indicator” (see above). Due to the ease of monitoring both indicators together, both were retained. A trail with cross-slope is slightly higher on one side than the other, which means the trail can have sheet flow, or a thin layer of water, running across it. Sheet flow is preferable to a trail that has cupping, or depth, which leads to water draining along the trail, eventually turning the

trail into a creek. A trail with cross-slope is said to have “positive drainage” since the water leaves the trail rather than staying on it.

The presence of cross-slope on trails tends to be closely related to overall use levels. As more users travel along a trail, the tread can wear away, which leads to cupping. Once a trail has some amount of cupping, it is only going to get worse, as water will exacerbate any linear depression in the ground. Therefore, trails that have cupping have a very low tolerance, and the threshold for trails with cross-slope and positive drainage is identified at 95%. Cross-slope and positive drainage are heavily influenced by trail design (e.g., soil types, bench construction, running slope) in addition to visitor use and serves to indicate the quality of trail design approaches that have been taken.

Monitoring Strategy: The presence of cross-slope would be monitored alongside the trail width indicator. The same protocols would apply in terms of quarterly sampling at representative sites per the work order system, though additional tools such as an inclinometer, plum, or level would likely be needed. Monitoring the two indicators together contributes to their reasonableness.

In addition to monitoring the presence or absence of positive slope at the representative monitoring sites, the angle of the slope would be recorded for internal reference. If the slope is moving from a positive slope to one that is more neutral or negative at monitored points, information about this change and the time it took to occur would be used to focus preventative maintenance efforts or implement appropriate management strategies as defined below.

Management Strategies: Many of the management strategies for the trail width indicator would apply to this cross-slope indicator as well. Specifically, the use of the text-for-status system, improved drainage, trail rehabilitation, elevated trail construction, and temporary closures strategies could be applied if/when the threshold is approached.

Indicator Topic: Social Trailing

Indicator: Number of social trails

Threshold: No more than two social trails intersecting any half-mile stretch of designated trail.

Rationale for Indicator and Threshold: This indicator measures social trailing branching from formal trails. This indicator measures trail sustainability by addressing erosion, resource concerns, and visitors straying from the formal trail towards sensitive areas such as cultural, vegetative, or wildlife areas. The threshold is no more than two social trails intersecting any half-mile stretch of designated trail.

When visitors attempt to walk towards an area of interest outside of the designated trail network, social trails form. With time, social trails can become indistinguishable from formal trails after repeated use by many visitors. Travel on social trails presents safety concerns for visitors, as visitors are no longer supported by wayfinding signage. Social trailing can also contribute to user conflicts, as it impacts visitor opportunities and experiences. Vegetation is highly sensitive to the creation of social trails, as it often includes the trampling of vegetation. As vegetation is trampled, habitats are also fragmented. By identifying social trails, the park can close unsustainable trails impacting sensitive areas.

This indicator is closely related to resource damage, safety concerns, fragmented trail networks, soil erosion, and vegetation trampling. Monitoring social trailing is important to the plan, as it helps achieve two of its goals—to “increase trail lifespan and minimize

maintenance needs” and “protect park resources and limit impacts from increased trail use.” Growing networks of social trails require more trail maintenance. Sensitive resources have been impacted due to social trailing, impacting the quality of visitors’ experience and resources. Monitoring and managing social trailing is important to ensuring the physical and managerial sustainability of the trail system.

Monitoring Strategy: All formal trails in each unit would undergo quarterly sampling. Sampling each season would allow for sufficient time for change to take place, while still being frequent enough to be sensitive to change. While walking on formal trails, social trails that branch from the formal trails would be tallied. Monitoring would occur by both volunteer site stewards and a combination of trail crews (i.e., Youth Conservation Corps, Student Conservation Association), volunteers, and designated park staff. In the summer, the primary group conducting monitoring would be volunteers.

.....
Management Strategies Specific to this Indicator:

- Restore social trails to acceptable conditions if earlier management strategies have been implemented and determined ineffective.
- Place informational signs instructing visitors to not use informal trails. As possible, also provide information on the impacts that using informal trails can have on resources.
- Improve maintenance and trail markings to discourage the creation of or use of informal trails.
- Add physical barriers and other site management strategies (e.g., rocks, logs, ropes, fences, or other barriers) along trails in key areas to discourage the use or formation of informal trails.

- Additional monitoring may be conducted along trails with high numbers of informal trails to further document the extent of informal trails in an area or along a trail. National Park Service staff would then identify any additional management actions needed to improve conditions.
- Leverage site stewards and dedicated trail volunteers to be on the lookout for new social trails that may be developing.

Indicator Topic: Unauthorized Parking

Indicator: Number of days when incidents of unauthorized parking occur

Threshold: Incidents of unauthorized parking occur on no more than 10 % of days in a given month per lot.

Rationale for Indicator and Threshold: This indicator provides an important measure of parking lot conditions in relation to visitor access to popular destinations as well as potential park resource impacts. When trailhead parking lots are full, visitors park outside of designated spaces, along roadways, and on vegetation. An incident of unauthorized parking is defined as any time more than five vehicles are parked outside of a designated parking space. As unauthorized parking presents a safety issue and can harm sensitive vegetation, the threshold is identified as no more than 10% of days in a given month per lot (i.e., no parking lot experiences unauthorized parking on more than three days per month).

Unauthorized parking is closely related to visitor use in terms of the amounts of use that occurs in one distinct area at times of the day and year. During the peak visitor use hours on the trail system, demand for parking at certain lots exceeds the number of parking spaces available, causing many visitors to park on the vegetation and along the roadside. This behavior frequently occurs during the busier summer months. Changes in parking conditions are easily identifiable on the ground.

- This indicator was selected due to its importance for ensuring visitor safety. When visitors park outside of designated parking spaces, they often must walk on roads designed for vehicular travel only. Private driveways and county and city roads bordering park property often become partially blocked by cars parking illegally. Emergency medical services and law enforcement responses are hindered when their vehicles do not have enough room to navigate narrow roads that are made impassable by these illegally parked cars. Unauthorized parking also contributes to resource damage in the form of soil disturbance, erosion, compaction, and the spread of invasive plants.
- While all the parking lots are within the Developed Zone, unauthorized parking has a direct correlation with the number of people on the trail. Therefore, it is highly related to desired conditions for several different zones. The desired conditions for the Developed Zone state that, “Visitors would have convenient access to park buildings and other facilities with ample opportunity for social experiences, and a high probability of encountering other visitors or park staff.” The desired visitor experience in zones where the trails are located range from a low-to-high probability of encountering other visitors. Monitoring of this indicator will help ensure the desired conditions for visitor experience in the different zones are achieved. Monitoring will also help to achieve the plan goal to “protect park resources and limit impacts from increased trail use.” While there is some tolerance for resource impacts along roads and other developed areas, unauthorized parking can be unsightly and lead to visitor conflicts.

.....
Monitoring Strategy: Monitoring would likely occur using either an automatic parking lot camera set to capture photographs at designated times or through staff observation. A shared tracking sheet among law enforcement, facility maintenance, and interpretation and visitor services staff and volunteers to note days unauthorized parking did or did not occur could be developed.

Unauthorized parking data collection is effective and manageable, offering detailed analysis to make informed management decisions. Overall, monitoring will occur at select parking lots (5–6 of the typically busy lots) on all weekend days and at least one weekday from April through October per year.

.....
Management Strategies Specific to this Indicator:

- Increase education and signage about parking in designated areas.
- Increase education and information during peak times about where to find available parking.
- Increase enforcement of parking outside of designated areas.
- Post signs indicating that parking is full and asking visitors to return at a later, designated time.
- Address vegetation and soil impacts by revegetating areas adjacent to the roadside.
- Employ a seasonal traffic management team using recreation fees.

Indicator Topic: Cultural Resource Impacts

Indicator: Number of incidences of damage (i.e., vandalism, graffiti) at cultural resources (i.e., historic structures, archeological ruins, historic sites)

Threshold: No more than two incidents of damage to cultural resources per year, unless specifically stated for individual sites or areas.

Rationale for Indicator and Threshold: This indicator measures the number of incidences of damage at cultural resources. Damage includes vandalism, graffiti, litter, climbing on stones and mortar, and related types of intentional disturbance to cultural resources. Cultural resources include all historic structures, archeological ruins, and historic sites within the park. The threshold is no more than two incidents of damage to cultural resources per year, unless specifically stated for individual sites. At times, additional precautions may be necessary to protect specific cultural resources. This indicator will allow park staff to take appropriate measures to address damage to cultural resources.

This indicator is related to the amount of use on trails and the easy access to cultural resources they provide. High levels of visitor use on trails contributes to increased incidents of damage to cultural resources. As more visitors recreate on trails, the likelihood of cultural resources being damaged increases. For example, when one visitor creates a social trail to a cultural resource, more visitors are likely to take that trail to the sensitive resource. Similarly, when one visitor damages a cultural resource, visitors see that damage and may contribute additional damage to the already damaged resource. In this way, this indicator is sensitive to changes in visitor use patterns.

Monitoring cultural resource impacts is important to the plan, as it helps achieve several of its goals—to protect natural and cultural resources and limit impacts from increased trail use. Cultural resources, by nature, are not renewable. Monitoring all impacts to them and taking corrective action as needed is important to ensuring the long-term sustainability of the trail system.

Monitoring Strategy: Damage to cultural resources would be identified by both park visitors and park staff, including law enforcement. Park visitors are accustomed to reporting damage to cultural resources they know about, and park staff is skilled at identifying this type of damage. Monitoring of damage to cultural resources would occur annually parkwide. The rock shelters spread out throughout the park would be monitored. Some sites would be prioritized for more careful monitoring. For example, the following areas may be monitored more closely than other areas of the park due to their high concentration of cultural resources: Allenbrook/Vickery Creek, Ivy Mill, Sope Creek, Akers Mill, Settles Bridge (ownership TBD), and the Scribner Homesite and Cemetery.

Management Strategies Specific to this Indicator:

- Integrate educational programs related to appropriate activities surrounding cultural and historic sites.
- Place educational signs at cultural sites to educate visitors about why they should not damage the areas.
- Provide deterrents to inappropriate visitor use near cultural sites (e.g., logs, rocks).
- Implement temporary or seasonal closures on trails that access cultural resources or historic sites.
- Permanently reroute trails away from cultural or historic sites.
- Implement security measures, such as alarm systems and cameras, along trails at cultural/historic sites.

- Increase the law enforcement presence at impacted cultural/historic sites and continue enforcement of park regulations.
- Remove sensitive artifacts from the field as a last-resort preservation/protection measure.

Indicator Topic: Visitor Conflicts

The topic of visitor conflicts includes two indicators: the number of visitor complaints for bicycle/pedestrian conflicts and the number of visitor complaints for dog conflicts, as described below.

.....
Indicator: Number of visitor complaints for bicycle/pedestrian conflicts

.....
Trigger: The monthly number of visitor complaints of bicycle/pedestrian conflicts increases no more than 15% compared to the baseline 12-month average.

.....
Threshold: The monthly number of visitor complaints of bicycle/pedestrian conflicts increases no more than 25% compared to the baseline 12-month average.

.....
Rationale for Indicator, Trigger, and Threshold: This indicator measures the number of visitor complaints of conflicts between bicyclists and pedestrians on park trails. Monitoring visitor complaints will help park staff better understand the frequency of conflicts between user groups and their geographic distribution across the park. Monitoring will also help staff gauge how overcrowding on park trails negatively impacts the visitor experience.

Visitor complaints are direct reflections of visitor use patterns and social behavior on park trails. They can help highlight gaps in educational resources for trail users—for example, where there is a need for more signage explaining bidirectional traffic on the Cochran Shoals Multiuse Trail. The number of complaints received can help park staff measure success in meeting this plan’s overarching goal of promoting social sustainability in the park’s trail system.

This indicator will be relatively easy to monitor, as staff plan to maintain a log of all visitor complaints received including those beyond bicycle/pedestrian conflicts. Adding features to the existing text-for-status program is also possible, which would be conducted in partnership with the Chattahoochee National Park Conservancy. In this program, visitors can report complaints of bicycle/pedestrian user conflicts via text message. The number or frequency of visitor complaints can vary based on visitor perceptions of social conditions on trails; however, the park can work with external partners—like the Chattahoochee National Park Conservancy or the local Southern Off-Road Biking Association chapter—to encourage trail users to report bicycle/pedestrian conflicts.

Park staff opted to adopt this indicator based on the high level of public feedback that staff regularly receives describing bicycle and pedestrian user conflicts. The public comments received in preliminary civic engagement efforts affirmed that conflicts between user groups have a notable impact on visitor experience for trail users. As park staff receives and analyzes visitor complaints, it will consider adaptive management strategies to mitigate future user conflicts. This indicator will also inform future management actions and responses to future requests or pressures to expand bicycle use to other units of the park where bicycle use is not currently authorized. This indicator can also be used to capture reported instances of improper bicycle use in units of the park where bicycle use is not authorized.

.....
Monitoring Strategy: Park staff would maintain a log of visitor complaints and analyze the number of complaints received pertaining to user conflicts between bicyclists and pedestrians. The park would also train regular trail maintenance volunteers in parks and site stewards to log visitor complaints that they receive during workdays or while in the park. External partners like the Chattahoochee National Park Conservancy and Southern Off-Road Biking Association can help encourage multiuse trail users and stakeholders

to report complaints to help park staff establish a solid baseline. Staff would work with the Chattahoochee National Park Conservancy to expand the text-for-status program to include a feature for visitors to report bicycle/pedestrian user conflicts.

Data collection would be consistent and ongoing. Reports would be gathered and analyzed monthly. Staff would initially monitor visitor complaints for 12 months to establish a baseline average (i.e., the average number of complaints received per month over that year). After this initial data gathering period, staff would compare new visitor complaints each month relative to the baseline monthly average. Staff would also analyze trail counter data to determine whether an increase in visitor complaints is related to an increase in trail use. The location in the park where the conflicts are occurring would also be considered. These findings would be discussed at the management team and/or interdisciplinary team meetings.

The number of comments received per month is likely to be higher during busier summer months than less-busy winter months. Park managers may need to adjust the trigger and threshold accordingly to account for this variability once routine monitoring is under way. Visitor use management is an iterative process in which management direction is continuously informed by new information and improved.

.....
Management Strategies to Be Implemented upon Plan Implementation:

- Work with the Chattahoochee National Park Conservancy to expand the text-for-status program to allow visitors to report complaints of bicycle/pedestrian user conflicts.
- Educate permit applicants on proper visitor behavior for any special park uses occurring in trail systems that allow both bicycle and pedestrian use.

.....
Management Strategies to Be Implemented upon Reaching Trigger:

- Install temporary signage at multiuse trailheads encouraging proper visitor behavior (e.g., observing bidirectional traffic and the bicycle speed limit, not riding on muddy trails).
- Install temporary speed limit signage along multiuse trails to educate visitors about established speed limits.
- Increase social media content and public messaging encouraging proper visitor behavior on multiuse trails.
- Collaborate with key partners and stakeholder groups (e.g., Chattahoochee National Park Conservancy, Southern Off-Road Biking Association) to amplify public messaging through their respective platforms.
- Reposition park trail counters to park units where visitor complaints of bicycle/pedestrian conflict are concentrated.
- Update visitor safety information on the NPS mobile app and the park website.
- Pilot a trial separation of bicycle and pedestrian trails in areas where visitor conflicts on multiuse trails tend to be a recurring issue.

.....
Management Strategies to Be Implemented upon Reaching Threshold:

- Increase the law enforcement presence on multiuse trails to enforce bidirectional traffic and established speed limits.
- Install bicycle weirs to prevent unauthorized bicycle use on pedestrian trails.
- Establish separate bicycle and pedestrian trails where visitor conflicts on multiuse trails tend to be a recurring issue.

.....
Indicator: Number of visitor complaints for conflicts with dogs
.....

Trigger: The monthly number of visitor complaints about user conflicts with dogs increases no more than 15% compared to the baseline 12-month average.

.....
Threshold: The monthly number of visitor complaints about user conflicts with dogs increases no more than 25% compared to the baseline 12-month average.
.....

.....
Rationale for Indicator, Trigger, and

Threshold: This indicator measures the number of visitor complaints about user conflicts with dogs. These complaints can range from improper dog waste disposal (e.g., waste bags left on the side of the trail) to the presence of unleashed dogs on park lands and even dog attacks. This indicator monitors many of the same things as the bicycle/pedestrian conflict indicator (e.g., safety, visitor conflicts, geographic distribution), but it also helps staff gauge resource damage and impairments to water quality caused by improper dog behavior on park trails.

Park staff chose to adopt this indicator based on the high level of public feedback that staff regularly receives regarding visitor conflicts with dogs on trails. Many park employees have also personally encountered dogs off leash or have even experienced dogs attack or had dogs jump on them while conducting fieldwork. The rationale for this indicator is largely the same as the visitor conflicts between bicyclists and pedestrians indicator (above).

.....
Monitoring Strategy: Visitor conflicts with dogs would be monitored by park staff in the same way as visitor conflicts between bicyclists and pedestrians. Monitoring both indicators in the same way contributes to their reasonability. Park staff would also work with the Chattahoochee National Park Conservancy to encourage the reporting of improper dog behavior as part of the recently launched “Bag and Bin It” partnership campaign for proper dog waste disposal.

Similar to the visitor conflicts between bicyclists and pedestrians indicator, park managers may need to adjust the trigger and threshold to account for seasonal variability once routine monitoring is underway.

.....
Management Strategies to Be Implemented upon Plan Implementation:

- Work with the Chattahoochee National Park Conservancy to incorporate more holistic dog behavior messaging in the “Bag and Bin It” partnership campaign and encourage visitors to report improper dog behavior.
- Increase social media content and public messaging encouraging proper dog behavior on all park trails.
- Update visitor safety and dog information on the NPS mobile app and park website.

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Management Strategies to Be Implemented upon Reaching Trigger:

- Update visitor safety and dog information on the NPS mobile app and park website.
- Install temporary signage encouraging proper dog behavior on trails experiencing a high concentration of visitor conflicts with dogs.
- Work with partners and stakeholders (e.g., local pet stores, animal shelters) to amplify public messaging about proper dog behavior on park trails.
- Pilot a prohibition of dogs on specific trails experiencing a high concentration of user conflicts with dogs.

.....
Management Strategies to Be Implemented upon Reaching Threshold:

- Increase the law enforcement presence in park units that have high concentrations of user conflicts due to improper dog behavior to issue citations.
- Amend the Superintendent’s Compendium to prohibit dogs on park trails that experience a high concentration of user conflicts with dogs.

Appendix E: Visitor Capacity

Introduction

Among the goals of the trails management plan are enhancing visitor experience, protecting natural and cultural resources, and limiting impacts from increased trail use (see chapter 1). Identification of visitor capacity is an important component of achieving those plan goals.

Visitor capacity is 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” (IVUMC 2019b). By identifying and implementing visitor capacities, the National Park Service can help ensure that resources are protected and that visitors have the opportunity for a range of meaningful and enjoyable experiences. In addition to being an effective management tool, identifying visitor capacities is also directed by legal mandate. The National Parks and Recreation Act of 1978 requires the National Park Service to identify and implement commitments for visitor capacities for all areas of a park unit. This appendix includes visitor capacities for the park’s land-based trail systems; visitor capacities for other areas are outside the scope of this trails management plan and would be identified in future planning.

Visitor capacities are management decisions based on the best available data and other factors, including professional judgment, staff experience and expertise, lessons learned, and public input. Visitor capacity identifications, like other management decisions, provide direction. Visitor capacities can be adjusted with appropriate environmental compliance as new information becomes available through further study, analysis, and monitoring.

Visitor capacities were identified using the four guidelines described in the Interagency Visitor Use Management Council’s “Visitor Capacity Guidebook,” as follows:

- Determine the analysis area.
- Review existing direction and knowledge.
- Identify the limiting attribute.
- Identify visitor capacity.

Determine the Analysis Area

To analyze visitor capacity in a meaningful way, the planning team divided the trail system into analysis areas. Generally, visitor capacity is analyzed for each park unit’s trail system; however, some units were subdivided into multiple analysis areas to ensure that zoning and desired conditions, as well as visitor use patterns, were relatively consistent throughout the analysis areas. Similarly, some adjacent units were combined due to shared access infrastructure, desired conditions, and use patterns.

The analysis areas include all resulting trails under the action alternative except the proposed greenway alignments. Visitor capacity for the proposed greenway, which is allowed under the action alternative, would be identified if and when the greenway is constructed. Park staff expects to collect use data from existing segments of pathway, including the Roswell Riverwalk and Rottenwood Creek, as well as the proposed Abbots Bridge pilot greenway, to inform identification of this greenway capacity.

The analytical scope of the analysis areas includes visitors using the trail system for trail-based recreational purposes such as walking, hiking, trail running, biking, streambank fishing, wildlife watching, and sightseeing. Visitation that incidentally occurs on trails for short periods of time but is predominantly river-based or focused on a non-trail-based activity such as picnicking is excluded from this visitor capacity analysis.

For example, visitors that walk the short stretch of trail between the Powers Island parking lot and the Powers Island step-down river access to begin a float down the river are not included. The analysis areas are:

1. Bowmans Island – West
2. Bowmans Island – East and Orrs Ferry
3. Settles Bridge
4. McGinnis Ferry
5. Suwanee Creek
6. Abbotts Bridge
7. Medlock Bridge
8. Jones Bridge – North
9. Jones Bridge – South (Chattahoochee River Environmental Education Center)
10. Holcomb Bridge
11. Island Ford
12. Vickery Creek
13. Gold Branch
14. Johnson Ferry – North
15. Johnson Ferry – South
16. Cochran Shoals – Sope and Gunby Creeks, Interstate North
17. Cochran Shoals – Powers Island
18. Palisades – East
19. Palisades – West

Existing Direction and Knowledge

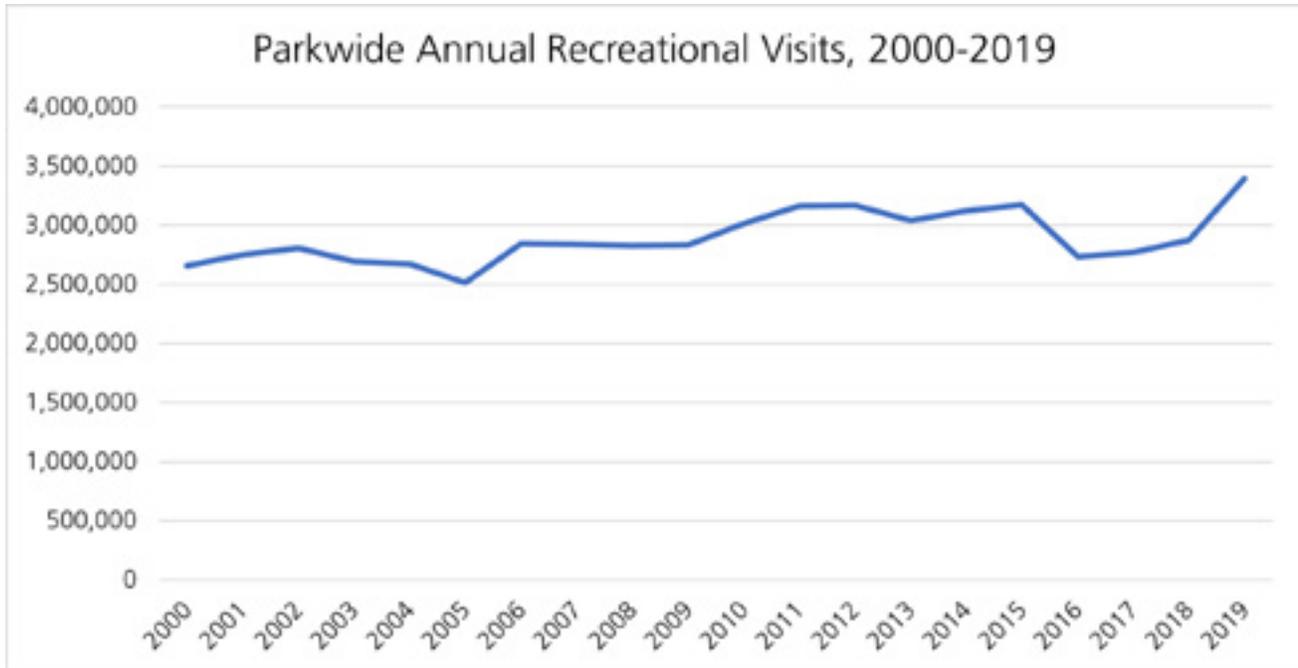
The existing direction and knowledge section of each analysis area reviews known information about the amount, type, timing, and distribution of visitor use that is specific to each analysis area, as well as information about the desired conditions for the area. The desired conditions include the zoning descriptions from the 2009 general management plan as well as the desired conditions developed for each unit for this trails management plan (see chapter 2 for these desired condition statements).

PARKWIDE DISCUSSION OF EXISTING KNOWLEDGE

Much of the known information about the amount, type, timing, and distribution of visitor use applies parkwide and does not vary from analysis area to analysis area. This information is summarized below so that it does not need to be repeated.

Overall, annual recreational visits to the park have increased 28% over the 20 years leading up to the COVID-19 pandemic (figure E-1). Figures from 2020 are omitted from this graph due to widespread shifts in visitor use patterns seen nationwide during the pandemic (Rice et al. 2021).

Figure E-1. Parkwide Annual Recreational Visits, 2000–2019



Visitation to the park is concentrated in the summer months of May through September, when overall visitation is nearly double what occurs in the winter months of December through March (figure E-2).

This parkwide data is generated primarily through inductive loop traffic counters located at entrances to parking areas throughout the park (NPS 2021). These raw traffic counts are adjusted for nonreportable visits (e.g., administrative or residential traffic), multiplied by a person-per-vehicle factor of 2.0, and added to estimates of nonvehicular arrivals to generate a count of parkwide visitation. While this parkwide data is useful for a comprehensive and long-term understanding of visitor use at the park, it may not accurately reflect visitor use on the trail system, as it does not distinguish between trail users and other visitor types who may be using the parking lots (e.g., river users). The data also does not track actual pedestrian arrivals and does not provide information about distribution across the trail system.

To develop a more refined understanding of trail use in the park, six infrared trail counters were deployed in November 2019 along trails at Bowmans Island West (1), on the Cochran Shoals Fitness Loop (1), at Island Ford (2), and at Vickery Creek (2). Data collected by these trail counters mimic the parkwide visitation data in that summer use of the trail system is higher than in the winter months, though the difference is not as dramatic as with the parkwide visitation, perhaps due to the relative attractiveness of winter month trail use as compared to winter month river use. For example, the Fitness Loop counter recorded around 40,000 to 50,000 users in the December through April period and around 60,000 to 70,000 users in the May through November period. While summer use was not quite double winter use as with parkwide visitation, trail use in the summer is still busier than winter use (figure E-3).

Figure E-2. Parkwide Average Monthly Visitation, 2016–2019

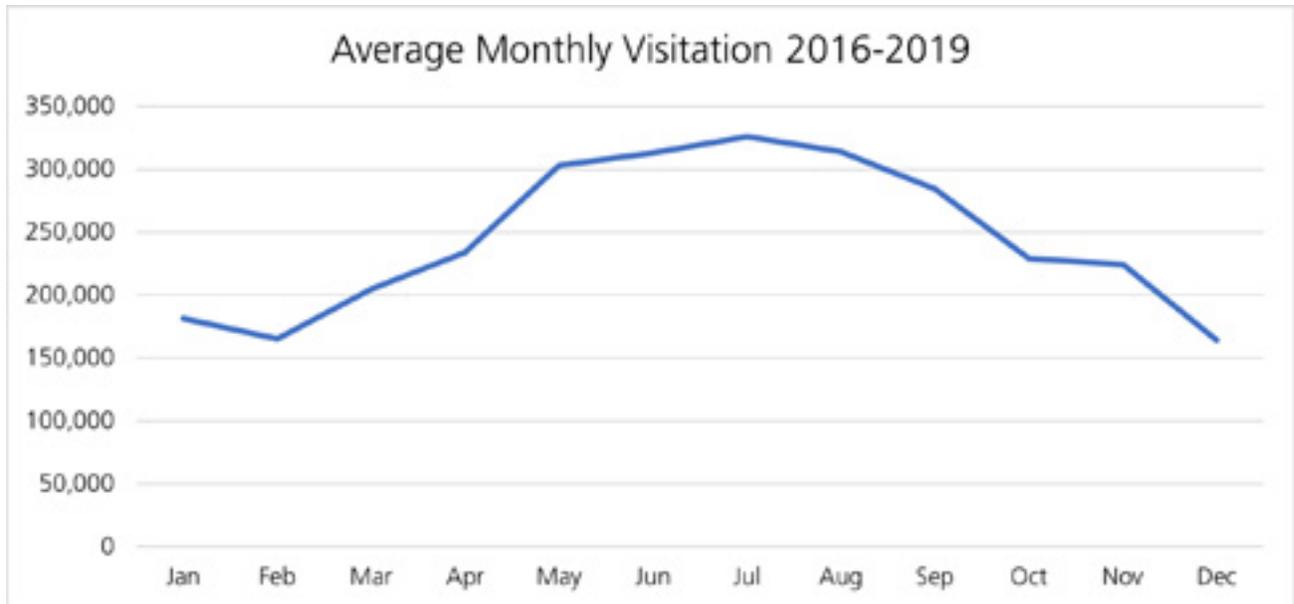
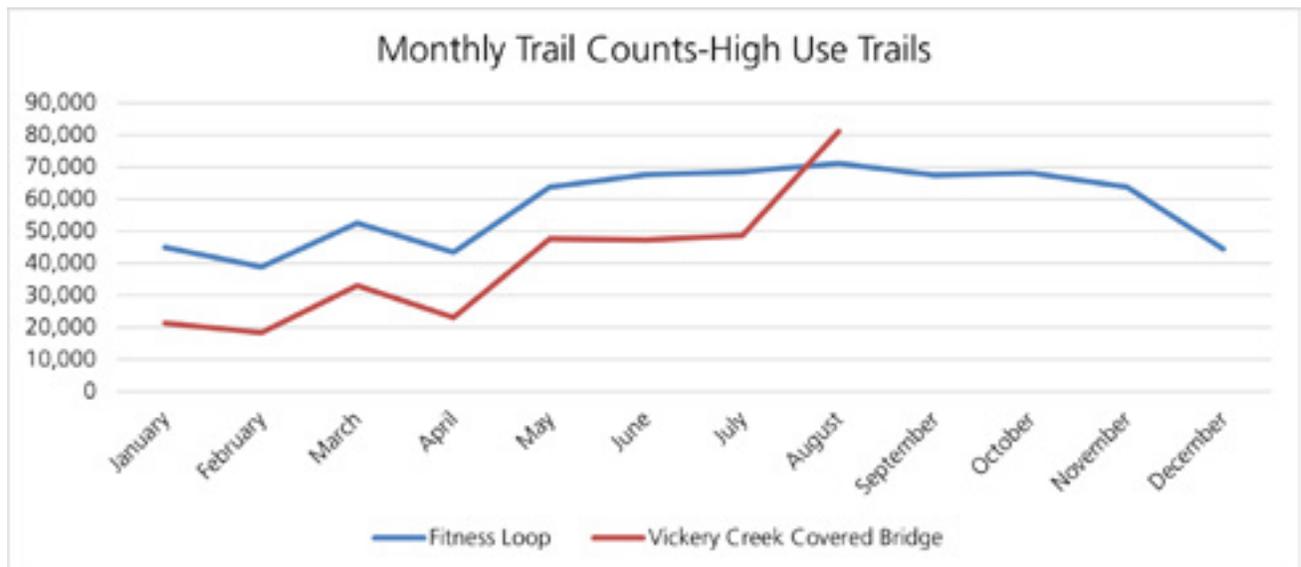


Figure E-3. Monthly Trail Counts on High-Use Trails

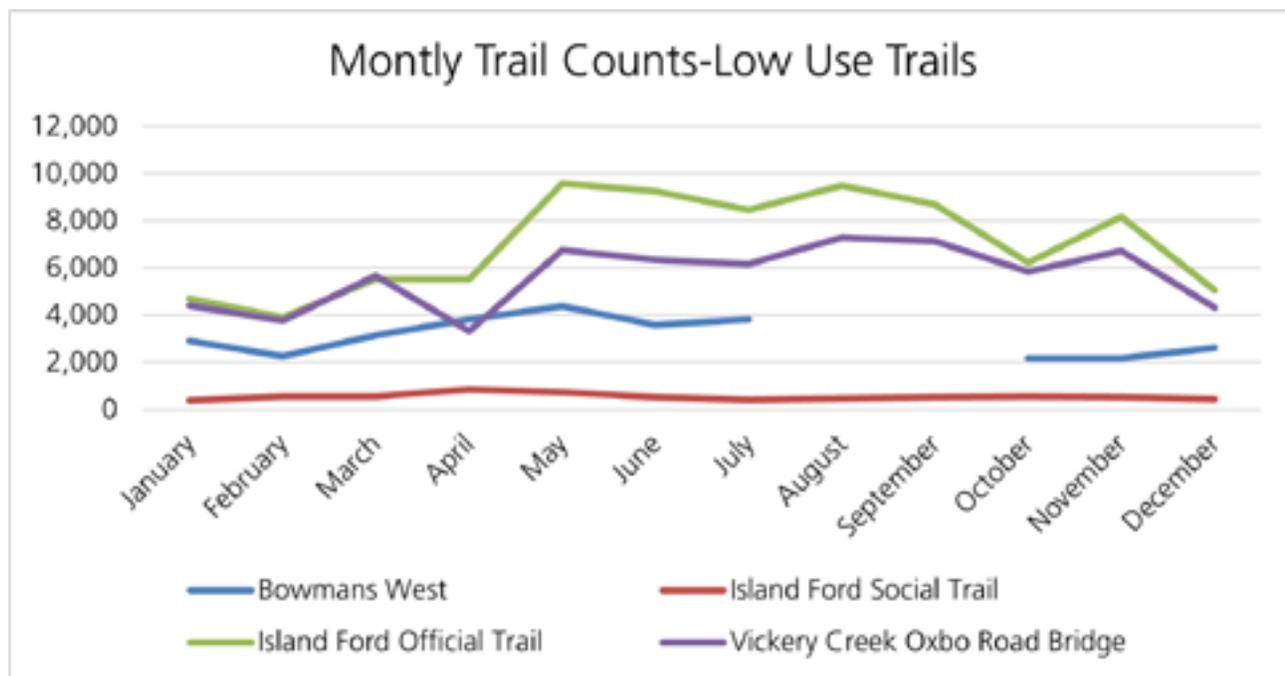


Breaks in lines represent months for which no data was recorded due to vandalism, theft, or a technical issue. January through July represent averages of 2020 and 2021 data. August through November represent 2020 data. December represents an average of 2019 and 2020 data.

However, the difference between summer and winter use is more dramatic on some of the lower-use trails, such as Bowmans Island – West (roughly 2,200 in February, October, and November; over 4,300 in May), the official riverside trail in Island Ford (fewer than 4,700 in January and February; more than 9,200 in May,

June, and August), and the Covered Bridge Trail in Vickery Creek (around 20,000 in January and February; over 45,000 in May, June, July, and August). Generally, these lower-use trails tended to see a peak around May, with use tapering a bit in the hottest summer months before rebounding slightly in August and September (figure E-4).

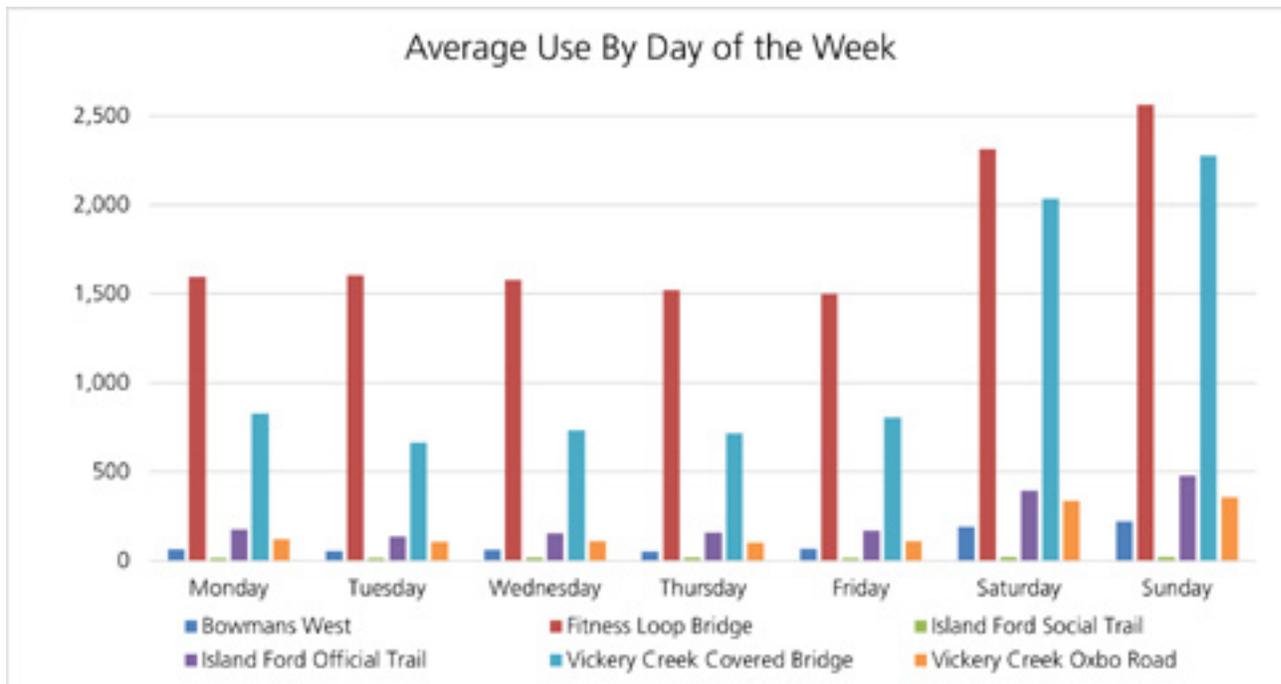
Figure E-4. Monthly Trail Counts on Low-Use Trails



Breaks in lines represent months for which no data was recorded due to vandalism, theft, or a technical issue. January through July represent averages of 2020 and 2021 data. August through November represent 2020 data. December represents an average of 2019 and 2020 data.

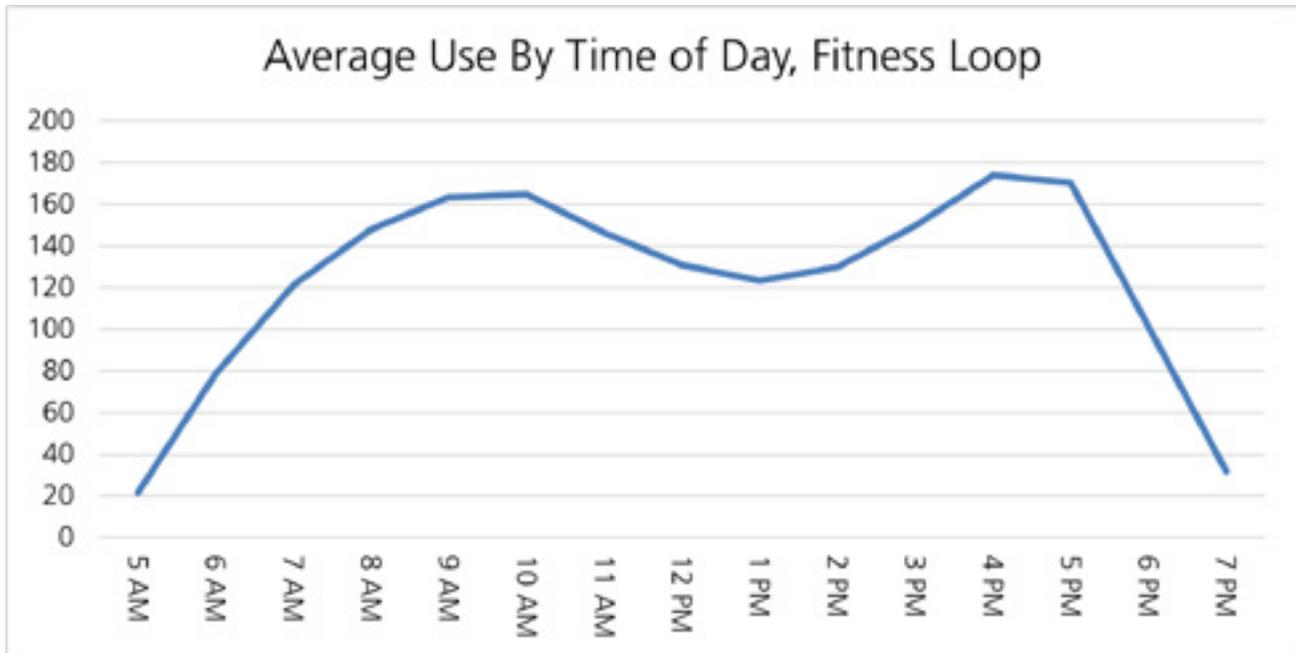
This trail counter data provides additional insight into the timing of visitor use. Across all six sites, weekends had more use than weekdays. However, that difference was much more pronounced at Bowmans Island and Vickery Creek, where use is over three times higher on weekends than weekdays than at the Cochran Shoals Fitness Loop, where visitation was only 50% busier on weekends. On average, weekends were twice as busy as weekdays (figure E-5).

Figure E-5. Average Trail Use by Day of the Week



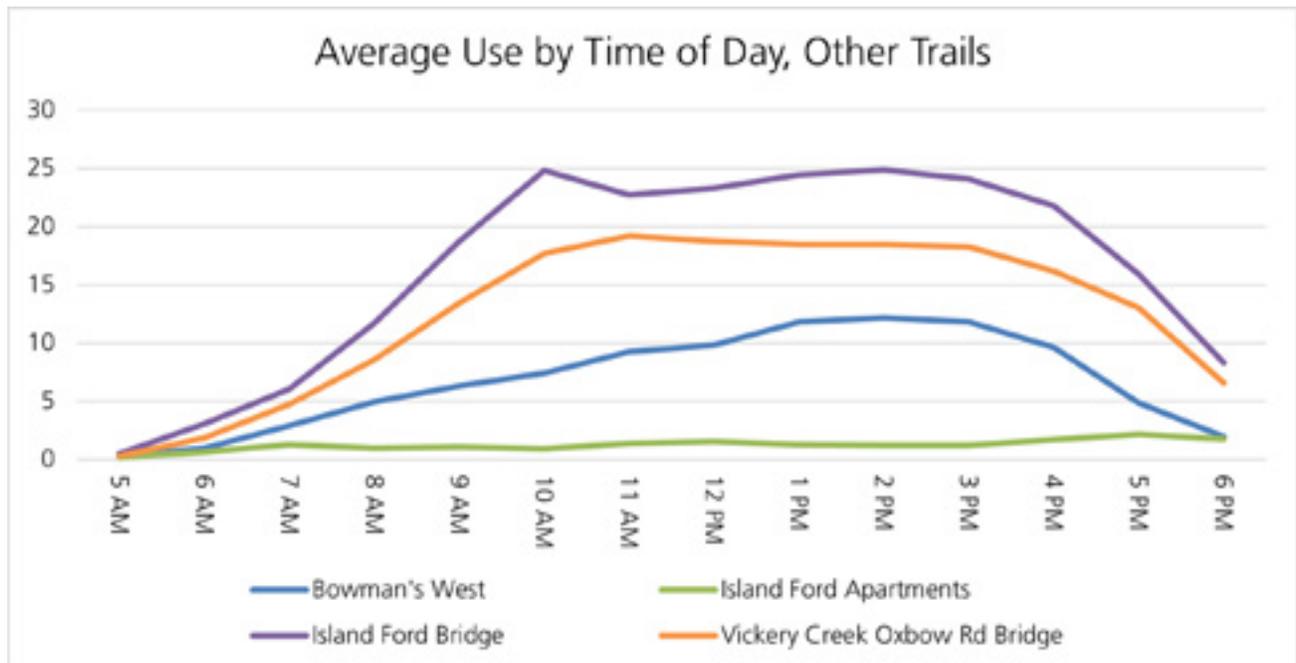
In terms of time of use, the trail counters indicate different patterns depending on the trail. At the Cochran Shoals Fitness Loop, there was a pronounced two-peak visitation pattern, with visitation peaking from 9:00 a.m. to 10:00 a.m., dipping during the middle of the day, and peaking again from 4:00 p.m. to 5:00 p.m. (figure E-6).

Figure E-6. Average Use of the Fitness Loop by Time of Day



This trend could be a result of visitors avoiding the heat in the middle of the day and using the trail system before and after work or school. Interestingly, the two-peak visitation pattern is not as pronounced, and in most cases, not present at all at the other trails (figure E-7).

Figure E-7. Average Use of Other Trails by Time of Day



The timing of trail use is also heavily weather dependent. On days when the Atlanta area received 0.1 inches of precipitation or more, trail use is markedly lower than would normally be expected.

The long-term data from the infrared trail counters is limited to the six locations the counters were placed. Due to the high number of formal access points (and even higher number of informal access points), placing long-term trail counters throughout the park to capture all use on a long-term basis would be cost- and time-prohibitive. Therefore, to gain a sense of trail use that occurs elsewhere in the park, the planning team partnered with Strava Metro.

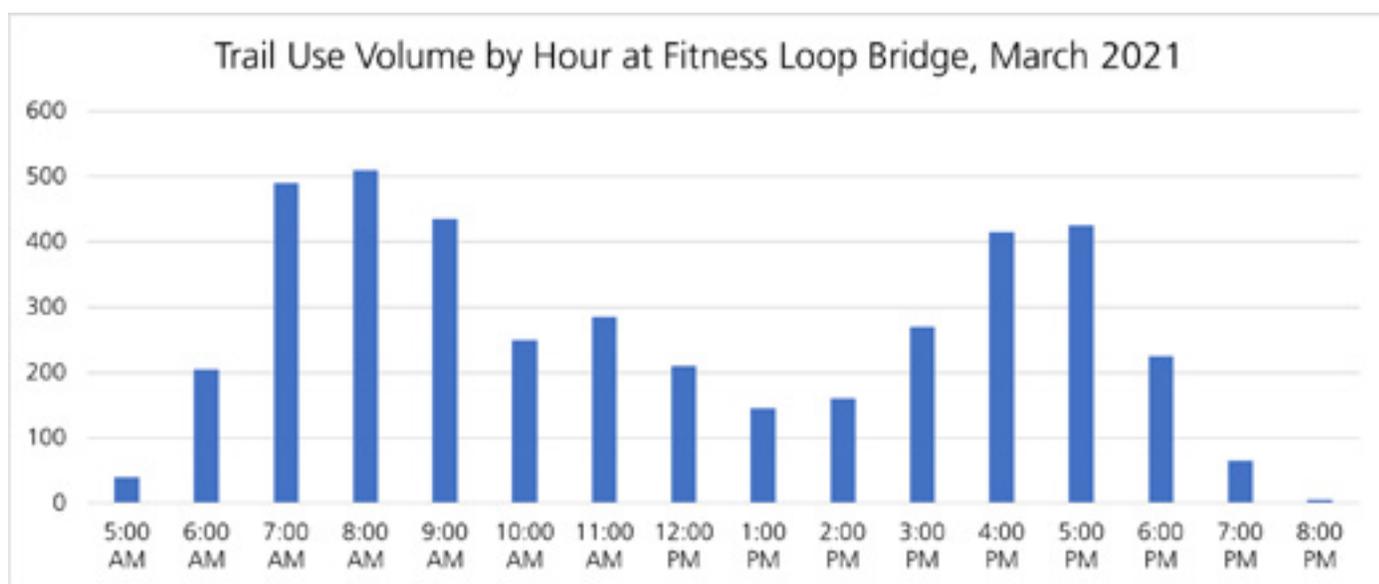
Strava is a fitness-tracking app that allows users to track and share the location, distance, and speed of workouts using their phone, GPS sport watch, or bicycle computer. Strava Metro aggregates and anonymizes this data for use by approved partners undertaking transportation planning, such as the National Park Service. The Strava Metro dashboard made available to the National Park Service under a terms of use agreement includes a “heat map” showing relative use levels on formal and user-created trails throughout the park, as

well as “street level” data that show how many trips were made on a particular stretch of trail over a customizable date range. The dashboard includes breakdowns for bicycle vs. pedestrian travel, commuter travel vs. leisure travel, information about day of the week and time of day the trail was used, average speed of travel, and age ranges and genders of users.

Using data from fitness trackers like Strava has been shown to successfully estimate trail use with limited on-site calibration (Headwaters Economics 2021). Based on previous research, the park area is a good candidate for using fitness tracking data due to its location in a major metropolitan area with recreational and commuter traffic. This report includes aggregated and de-identified data from Strava Metro.

Many of the same patterns and trends observed in the infrared trail counter data were apparent in the Strava data. For example, the two-peak visitation pattern seen at the Fitness Loop bridge was also noticeable in the Strava data for the corresponding stretch of trail (for comparison, see figures E-6 and E-8). The Strava data also mimicked the trail counter data in that weekends were much busier than weekdays.

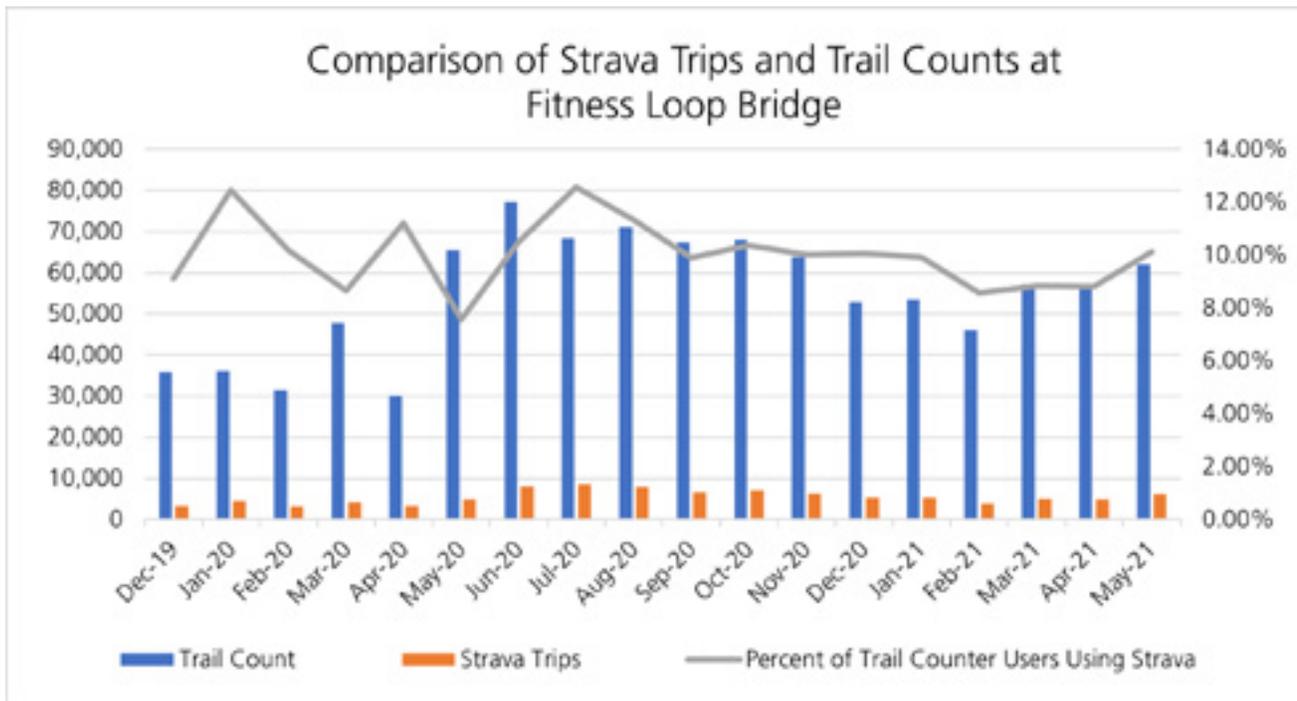
Figure E-8. Trail Use Volumes by Hour on the Fitness Loop Bridge, March 2021
Data Source: Strava Metro Dashboard



Knowing that the Strava data seems to be correlated with the trail counter data, it is possible to calibrate the former using the latter. Calibration is the process of adjusting estimates of total trail use to account for how much actual use is represented by the Strava use (Headwaters Economics 2021). At the Fitness Loop bridge, a comparison of Strava use levels with trail counter use levels shows that between 8% and 12% of users tracked their activity using Strava (figure E-9). The average over these 18 months was 10.0%, and the standard deviation was relatively low at 0.0128.

However, the proportion of trail users tracking their activity on Strava varies from unit to unit. During the same period at the Bowmans Island West counter, the proportion was a little over 5%, while it was just over 1% at the Vickery Creek Oxbo Road counter and around 0.5% at the Island Ford Bridge counter. This variability is not uncommon. A similar study comparing trail counts with Strava counts at four trailheads near Whitefish, Montana, found that Strava users made up between 1% and 5% of total trail users (Headwaters Economics 2018). The variability at Chattahoochee River NRA can likely be attributed to the varying levels of fitness orientation the different units attract.

Figure E-9. Comparison of Strava Trips and Trail Counts at Fitness Loop Bridge



Due to this variability in the proportion of trail users tracking their activity with Strava, the planning team undertook an effort to calibrate the Strava counts with on-the-ground trail counts from August through December 2021. The proportions from these calibrations are included in the respective visitor capacity identifications for each analysis area, where available. For some

units, the raw count of trail users collected by the on-the-ground trail counters provided useful information, particularly at units with limited access points and lower seasonal variability.

It should be noted that reliance upon the data from Strava does come with inherent challenges. The rate of technology adoption is relatively

low in some of the units, and this type of data is generally more reliable as more people use it. Additionally, Strava users are not necessarily representative of trail users as a whole. Strava users tend to be more avid, likely using the trails for longer distances and with greater frequency (Headwaters Economics 2021). For Chattahoochee River National Recreation Area, the Strava Metro dashboard shows that 44% of users are between the ages of 35 and 54, while users aged 20 to 34 comprise 36% of the sample. Users under the age of 20 and over the age of 54 account for a mere 11% and 10%, respectively (percentages do not equal 100 due to rounding). In addition to skewing toward middle ages, Strava users also tend to be male. For example, in July 2021, males comprised 64% of Strava users on the Fitness Loop bridge.

Nevertheless, the Strava data does seem to have a reliable correlation with the trail counter data, and it is reasonable to rely upon this calibrated data where other data sources are unavailable due to high cost or other factors that make it unfeasible to collect.

PROCESS FOR IDENTIFYING CURRENT USE LEVEL

The process to identify the “current use level” in each analysis area includes inputs from all the data sources described above. Given the shortcomings with data from the traffic counters (does not distinguish between trail users and other visitor types arriving by vehicle; does not track pedestrian arrivals), trail counters (long-term data is limited to the locations the counters were placed and misses many arrival routes in the porous trail system), and Strava data (only a small proportion of trail users are on Strava; Strava users are not representative of all trail users), the three data sources are considered together to “triangulate” an understanding of “current trail use” at each analysis area. This approach using the data available to best approximate current trail use is consistent with the sliding scale concept in the Visitor Use Management Framework.

To begin to develop an understanding of “current trail use” for each analysis area, the proportion of weekend use to weekday use is calculated by comparing the average weekday use to average weekend use from the available trail counter data. A “weekend multiplier” is calculated using the following equation:

$$\text{Weekend Multiplier} = ((\text{Avg Weekend Use} - \text{Avg Weekday Use}) \div \text{Avg Weekday Use}) + 1$$

If no trail counter data is available for the analysis area, 2.0 is used as the weekend multiplier since on average, weekends were twice as busy as weekdays (see figure E-5).

Next, an average of the four busiest months of 2019 traffic counter data was calculated. The four busiest months were used due to variability in busy season from counter to counter and to eliminate any months when the counter was not fully operating. Data from 2019 was used, as it is the last full year of data unaffected by shifts in use patterns seen nationally during the COVID-19 pandemic (Rice et al. 2021). This average of the high four months was adjusted using the visitor use counting procedures determined by the NPS social science program (NPS 2021c). These adjustments include a reduction for nonreportable vehicles, a people per vehicle multiplier, and an estimate of pedestrian arrivals. After these adjustments, an “average traffic counter people per day (PPD)” for the four busiest months is generated.

The average traffic counter PPD for the four busiest months is adjusted by the weekend multiplier to generate an “average traffic counter PPD on weekend days during four busiest months” using the following equation (solving for “y”):

$$7(\text{Average Traffic Counter PPD on Weekend Days During Four Busiest Months}) = 5x + 2y, \text{ where } (\text{Weekend Multiplier})x = 1y$$

To account for the fact that the traffic counters do not distinguish between trail users and non-trail users, an estimate of the portion of visitors who pass the traffic counter but do not use the trails is used. This estimate was generated for each analysis area based on park staff experience in that area. After multiplying the average traffic counter PPD on weekend days during four busiest months by the “estimated proportion of

traffic counter PPD using trails,” a final estimate of people per day using the trails on weekends during busy months is reached (“traffic counter estimate”). This number represents an estimate of the number of visitors who use the trails on the average weekend day during the four busiest months of the year and is therefore understood to represent a near-maximum of current use, or typical busy day (table E-1).

Table E-1. Trail Use Estimates Based on Traffic Counter Data

Analysis Area	Weekend Multiplier	Average Traffic Counter PPD (Four Busiest Months)	Average Traffic Counter PPD on Weekend Days During Four Busiest Months	Estimated Proportion of Traffic Counter PPD Using Trails	Traffic Counter Estimate (PPD)
Bowmans Island West	3.4	544	1,098	100%	1,098
Bowmans Island East and Orrs Ferry	1.8	No data available	No data available	100%	No data available
Settles Bridge	3.8	248	523	35%	183
McGinnis Ferry	1.7	No data available	No data available	N/A	No data available
Suwanee Creek	2.0	238	369	100%	369
Abbotts Bridge	1.9	160	243	20%	49
Medlock Bridge	1.6	235	324	40%	130
Jones Bridge North	4.1	348	755	85%	642
Jones Bridge (South/CREEC)*	1.8	No data available	No data available	85%	No data available
Holcomb Bridge	1.7	No data available	No data available	100%	No data available
Island Ford	2.8	557	1,023	75%	768
Vickery Creek	3.0	260	497	100%	497
Gold Branch	2.6	236	425	100%	425
Johnson Ferry North	2.6	700	1,255	50%	628
Johnson Ferry South	0.9	105	95	30%	28
Cochran Shoals	2.0	3,450	5,293	100%	5,293
Powers Island	1.8	600	872	10%	87
Palisades East	2.9	679	1,284	85%	1,092
Palisades West	1.2	1,515	1,696	80%	1,357

* Chattahoochee River Environmental Education Center

Once the estimated traffic counter estimate is determined, a second estimate is developed using trail counter calibrated Strava data. First, a “proportion using Strava” is calculated by dividing an infrared trail count from a representative location in the analysis area with the number of total Strava trips on that segment of trail during the same period (typically May 2021 for counters with several months of data; otherwise, the period the trail counter was present).

Then, Strava Metro data from the four months from April 2021 through July 2021 is reviewed to determine how many Strava Activities occurred on all access routes into the analysis area (not all on-the-ground trails show use on Strava due to low or no use by Strava users). The simple correlation, or proportion using Strava, is then

used to translate the “April–July 2021 Strava activities” number into an estimate of the total number of Strava and non-Strava users who used the trail each day during the April–July 2021 time frame.

This “average April–July 2021 PPD (Strava and non-Strava)” is then adjusted by the same weekend multiplier calculated above to reach a final “calibrated Strava estimate” using the following equation (solving for y):

This number represents an estimate of the number of visitors who used the trails on the average weekend day during the period from April through July 2021 and is therefore understood to represent a near-maximum of current use, or typical busy day (table E-2).

Table E-2. Trail Use Estimates Based on Trail Counter-Calibrated Strava Data

Analysis Area	Weekend Multiplier	Proportion Using Strava	Estimated Average April–July 2021 PPD (Strava and non-Strava)	Calibrated Strava Estimate (PPD)
Bowmans Island West	3.4	2.59%	33	67
Bowmans Island East and Orrs Ferry	1.8	1.46%	11	17
Settles Bridge	3.8	0.95%	48	101
McGinnis Ferry	1.7	0.00%	0	0
Suwanee Creek	2.0	0.00%	0	0
Abbotts Bridge	1.9	0.00%	0	0
Medlock Bridge	1.6	0.00%	0	0
Jones Bridge North	4.1	0.54%	623	1,353
Jones Bridge South (CREEC)*	1.8	1.83%	215	311
Holcomb Bridge	1.7	0.00%	0	0
Island Ford	2.8	1.33%	268	493
Vickery Creek	3.0	1.02%	617	1179
Gold Branch	2.6	1.63%	223	401
Johnson Ferry North	2.6	2.52%	189	338
Johnson Ferry South	0.9	0.47%	243	219
Cochran Shoals	2.0	9.23%	3,781	5,800
Powers Island	1.8	4.50%	94	136
Palisades East	2.9	1.37%	644	1,218
Palisades West	1.2	3.60%	683	765

* Chattahoochee River Environmental Education Center

Finally, the traffic counter estimate and the calibrated Strava estimate are compared to determine a reasonable “estimate of current trail use.” In some cases, a simple average of the two figures is taken. In other cases, the estimate of current trail use is weighted more heavily toward one data point or the other due to a higher degree of confidence in that number. In still other cases, raw trail counts collected during the Strava calibration effort were used as a third input when there was insufficient data to calculate either or both of the traffic counter estimate and/or calibrated Strava estimate. However, the raw trail counts are only included where this data is

helpful, as in many cases it is misleading (due to it representing just one of several access points into a unit’s trail system or due to a significant difference between peak visitation level time frames and the time frame trail counts were collected). This estimate of current trail use is used in the existing direction and knowledge sections of each analysis area to understand the current amount of use. To account for the assumptions and potential sources of error occurring throughout all the calculations, the estimates of current trail use are rounded up (table E-3).

Table E-3. Estimates of Current Trail Use

Analysis Area	Traffic Counter Estimate (PPD)	Calibrated Strava Estimate (PPD)	Trail Count (PPD)	Estimate of Current Trail Use (PPD)	Notes
Bowmans Island West	1,098	67	Limited data	600	Generally, traffic counter estimate seems high due to anomalies with that traffic counter. Calibrated Strava estimate seems low. Average is reasonable.
Bowmans Island East and Orrs Ferry	No data available	17	Limited data	25	—
Settles Bridge	183	101	Limited data	150	—
McGinnis Ferry	No data available	No data available	6	15	The average trail count on weekend days during the October and November data collection was 6. Units in the northern part of the park are generally 2.5 times busier in peak months as compared to October/November. Hence, 6 is multiplied by 2.5.
Suwanee Creek	369	No data available	No data available	375	—
Abbotts Bridge	49	No data available	Limited data	50	—
Medlock Bridge	130	No data available	Limited data	130	—
Jones Bridge North	642	1353	Limited data	750	Traffic counter data is considered more reliable at Jones Bridge North. This unit has a low Strava usage rate that could be contributing to error.
Jones Bridge (South/ CREEC)*	No data available	311	Limited data	325	—
Holcomb Bridge	No data available	No data available	24	60	The average trail count on weekend days during the October and November data collection was 24. Units in the northern part of the park are generally 2.5 times busier in peak months as compared to October/November. Hence, 24 is multiplied by 2.5.
Island Ford	768	493	Limited data	650	—

Analysis Area	Traffic Counter Estimate (PPD)	Calibrated Strava Estimate (PPD)	Trail Count (PPD)	Estimate of Current Trail Use (PPD)	Notes
Vickery Creek	497	1,179	1,252	1,200	Strava data is considered more reliable at Vickery Creek, as there is no traffic counter at the primary access to the unit (the covered bridge). Long-term trail counter data at the two primary entry points (covered bridge and Oxbo Road) indicates actual use to be closer to 1,200.
Gold Branch	425	401	340	425	Trail counter covers only trail access to the unit. Trail counter data collected in slightly off-peak time in August and September.
Johnson Ferry North	628	338	Limited data	500	—
Johnson Ferry South	28	219	Limited data	200	Strava data is considered more reliable at Johnson Ferry South, as the traffic counter misses a significant portion of visitation that accesses the unit at the north end and travels through the unit.
Cochran Shoals	5,293	5,800	Limited data	5,550	—
Powers Island	87	136	Limited data	125	—
Palisades East	1,092	1d218	Limited data	1,175	—
Palisades West	1,357	765	Limited data	1,075	—

* Chattahoochee River Environmental Education Center

The Limiting Attribute

This guideline involves the identification of the limiting attribute(s) that most constrains the analysis area's ability to accommodate visitor use while achieving and/or maintaining desired conditions. For example, a limiting attribute might be encounters with other groups traveling along a trail, a historic bridge's structural integrity and ability to accommodate a volume of trail uses, or trampled vegetation. The limiting or constraining attribute varies from analysis area to analysis area. Identification of the limiting attribute is an important step, as it connects the most important resources and visitor experiences to on-the-ground conditions with the identified visitor capacity number.

Identify Visitor Capacity and Implementation Strategies

Visitor capacity contains two parts. First is the identification of the visitor capacity (maximum amounts and types of use) and second is the identification of management strategies and/or actions that could be taken to implement visitor capacity to ensure the amount of visitor use is managed to achieve and maintain desired conditions.

Identify Visitor Capacity. To identify the appropriate amounts and types of use for each of the analysis areas, the previous steps were reviewed to understand current conditions and how they compare to desired conditions for the area. Based on this understanding, the planning team determined whether visitation levels should be allowed to increase, maintained at the current level, or decreased to achieve desired conditions. If current conditions are in keeping with desired conditions, the visitor capacity allows for an increase in visitation from current levels. However, if current conditions are not consistent with desired conditions, the visitor capacity is identified below the current use level. When current conditions align with desired conditions but are close to violating them, the visitor capacity is identified at or about the current use level.

The expression of visitor capacity for the analysis areas follows a sliding scale approach, whereby more complex units have visitor capacities identified based on people entering the unit's trail system per hour (people per hour, or PPH), and less complex units have visitor capacities identified based on people entering the unit's trail system per day (people per day, or PPD). These visitor capacity measures will allow for ease of implementation and monitoring, as park staff can review trail counter data on a daily or hourly use level and quickly assess if the trail is at or over capacity.

Importantly, the mileage of official trails within a unit is changing under the action alternative (this visitor capacity is considered part of the action alternative). As such, a determination to "maintain" use at current levels may represent a decrease in the number of people using a given mile of trail in an hour or day. For example, if a unit currently has 10 miles of trails and has 1,000 people per day and the action alternative includes increasing the trail mileage to 15, maintaining use levels at 1,000 people per day actually represents a decrease in the number of people accessing the trails per mile from 100 people/mile/day to 67 people/mile/day. In this scenario, such a decrease would be more likely to achieve desired conditions. Similarly, a determination to "increase" use may actually represent a maintenance in the number of people using a given mile of trail in an hour or day, and so on. The opposite would also be true of trails that have decreased trail mileage available under the action alternative.

Implementation Strategies. Management strategies to ensure use levels stay within identified visitor capacities were adapted from best practices in visitor use management and examples from other plans and projects across the National Park Service. Implementation strategies include actions that would be taken immediately as well as adaptive management strategies. The adaptive management strategies would only be implemented if and when conditions dictate they are necessary and

after a variety of management strategies have been implemented. These conditions would be evaluated through routine monitoring (see appendix D).

The following management strategies would apply broadly to many of the analysis areas. Others that are more specific to a single analysis area are described under each analysis area.

- Increase visitor education (as part of Leave No Trace messaging) about the importance of staying on trails to protect vegetation, soils, and water.
- Encourage voluntary redistribution of use to off-peak times by increasing public education efforts and providing visitors with trip planning information on the park website, mobile app, and other venues.
- Encourage voluntary redistribution from southern units to northern units by increasing public education efforts and providing visitors with trip planning information on the park website, mobile app, and other venues.
- Increase education and signage about parking in designated areas.
- Increase education and information during peak times about where to find available parking.
- Install boardwalks in areas that are wet or high-flood zones.
- Install rock armoring to address erosion issues and increase the sustainability of trails.
- As staffing allows, increase parking enforcement for particularly egregious violations that limit other visitors' ability to park.
- Use up-to-date technology, such as interactive maps and other technology or social media, to provide information to visitors before and during their visits.
- Manage group size at appropriate locations.

Visitor Capacity Identification and Associated Implementation Strategies

Each analysis area is discussed below, including a review of existing direction and knowledge, the limiting attribute and relevant indicators, and visitor capacity identifications and associated rationale.

Bowmans Island West

ANALYSIS AREA

This analysis area includes the trail system in the Bowmans Island unit west of the Chattahoochee River.

EXISTING DIRECTION AND KNOWLEDGE

Trail use on Bowmans Island West consists of hikers, trail runners, dog walkers, and anglers accessing the river for fishing. This analysis area experiences a high level of neighborhood access from local residents. Visitation on the trails tends to follow the two-peak pattern described above, with peaks around 7:00 a.m. and 5:00 p.m. Use of this area is somewhat lower than in other units, with moderate use of trails overall and high use of trails along the river. "Current trail use" is estimated at 600 people per day (see table E-3).

All trails in Bowmans Island West are in the Natural Area Recreation Zone, where the "probability of encountering other visitors would be moderate to high," while the "degree of isolation and closeness would be limited by the presence of other people." The desired conditions for Bowmans Island West include opportunities for visitors to "experience a quieter and more tranquil setting than in many of the other units, with ample opportunities for solitude." In this area, "opportunities to access the river and riverbank for fly fishing would be plentiful."

Management concerns in Bowmans Island West include social trailing, vegetation trampling, trail widening, shoreline erosion, and the spread of invasive species. Therefore, monitoring the trail condition, social trailing, and visitor conflicts indicators will be important to achieving desired conditions at Bowmans Island West.

LIMITING ATTRIBUTE

Trail condition is the attribute that most constrains the Bowmans Island West trail system's ability to accommodate use. As the area receives more visitation, more social trailing and shoreline erosion occurs. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired condition of a tranquil setting.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at higher use levels than Bowmans Island West currently has, at 900 people per day. As the mileage available increases from 4 miles to 7.9 miles under the action alternative, the number of people per mile would decrease under this visitor capacity. This lower number of people per mile would relieve some of the pressure on trail conditions so that the trail system better achieves desired conditions.

MANAGEMENT STRATEGIES

- Install maps and signage about various destinations in this unit.
- Educate park visitors about the new opportunities in this unit, especially for those who may be seeking a quieter, more tranquil area of the park where they can encounter fewer people.
- Promote this unit to increase use through social media, interpretation, local news outlets, and at local attractions (i.e., Cummings, Duluth, Lake Lanier).
- Explore potential parking opportunities to reduce pressure on available parking. Opportunities include at the ranger station; along highway 20; coordinating parking with the neighboring Army Corps; or at the trout hatchery through partnership.
- Install an NPS sign adjacent to the Army Corps sign to increase awareness of entering the NPS unit.

Bowmans Island East and Orrs Ferry

ANALYSIS AREA

The analysis area includes the eastern portion of Bowmans Island (hereafter, Bowmans East) and the Orrs Ferry unit.

EXISTING DIRECTION AND KNOWLEDGE

Currently, no official trails exist in either of these sections. Visitors still access the area using social trails. Typical uses include fishing, bouldering, walking, and some trail running. The primary destination for anglers is the river or the dam. Unlike the two-peak visitation pattern seen on the Fitness Loop, peak use at Bowmans East and Orrs Ferry typically occurs early in the morning, from 7:00 a.m. to 10:00 a.m. While these two areas can be busy on the weekends (with the department of transportation parking lot south of Highway 20 sometimes filling up), these are still some of the least-visited sections of the park. Current trail use is estimated at 25 people per day (see table E-3).

All trails in Bowmans East are in the Natural Zone. Under this plan, most of the Orrs Ferry unit would be rezoned from the Natural Area Recreation Zone to the Natural Zone, though an area near State Route 20 would remain in the Natural Area Recreation Zone. In the Natural Zone, the "level of encounters with other staff and visitors would be low." Conversely, on the trails in the Natural Area Recreation Zone, the "probability of encountering other visitors would be moderate to high." The Natural Zone tolerance for natural resource degradation will be "very low," whereas, in the Natural Area Recreation Zone, the tolerance will be "low." The desired conditions for the visitor experience in Bowmans East include "an even quieter and more tranquil setting and more opportunities for solitude as compared to the west segment of Bowmans Island. Visitors would feel like they have space, and they would have a relatively low probability of encountering many other users compared to the west segment or other units of the park." In Orrs Ferry, visitors "would experience a tranquil riverside experience . . . [and] a closeness to nature with a low level of

encounters with other visitors and park staff.” The rezone in Orrs Ferry from Natural Area Recreation Zone to Natural Zone aligns with the desired conditions of preserving the area as an ecological buffer zone and protecting sensitive plant species and wildlife habitat. Bowmans East is also an area of sensitive natural resources, where “a sense of being closer to the North Georgia Mountains would prevail.”

The issue of most management concern for both Bowmans East and Orrs Ferry is the impacts from anglers accessing the river. When anglers create their own informal access to the river, natural resource damage occurs from erosion, vegetation trampling, water quality impacts, and bank instability. For these reasons, it will be important to monitor trail width and depth, as well as the number of social trails, to meet desired conditions in these two areas.

LIMITING ATTRIBUTE

Impacts to resources—including vegetation, soils, and riverbanks—in both Bowmans East and Orrs Ferry is the attribute that most constrains the trail system’s ability to accommodate use. As visitation in the area increases, more vegetation trampling, soil destabilization, erosion, and impacts to the water quality occur. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired conditions of a very low/low tolerance for natural resource degradation. These impacts are also closely related to crowding and congestion in the areas, which at select times may exceed the desired conditions that allow for low levels of encounters in the Natural Zone.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at higher use levels than Bowmans East and Orrs Ferry currently have, at 40 people per day. Since these two areas currently have no official trails and new sustainable trails will be implemented under the action alternative, the number of people in this unit will be able to increase under this visitor capacity while still achieving desired conditions. Approximately 5.6 miles of trail would be added to Bowmans East, with another 1.6 miles added to Orrs Ferry.

MANAGEMENT STRATEGIES

- Install maps and signage about various destinations in both units.
- Educate park visitors about the new opportunities in these units, especially for those who may be seeking a quieter, more tranquil area of the park where they can encounter fewer people.
- Develop additional parking on park-owned property south of Highway 20.
- Increase education and signage about parking in designated areas.
- Increase education and information during peak times about where to find available parking.

Settles Bridge

ANALYSIS AREA

This analysis area includes the entire trail system in the Settles Bridge unit.

EXISTING DIRECTION AND KNOWLEDGE

Because visitor activity at the Settles Bridge unit is heavily focused on river use, trail use is relatively limited and is mostly focused around the parking lot and the boardwalk. Many of those who do use the trails tend to be fishing or walking along the trails alone or in small groups. Strava use data shows that a fair number of active recreationists connect into the northern portion of the unit from the adjacent Gwinnett County Park, a connection that would be better facilitated under the action alternative. Over the years, park staff has worked to discourage people from climbing onto and jumping off the bridge.

Visitation on the trails tends to be much heavier in the morning than in the afternoon. “Current trail use” is estimated at 150 people per day (see table E-3).

Under the action alternative, all the trails would be in the Natural Area Recreation Zone, with the exception of the trails in the immediate vicinity of the boat launch, access road, and parking lot, which would be in the Developed Zone. On the trails, the “probability of encountering other visitors would be moderate to high,”

while the “degree of isolation and closeness to nature would be limited by the presence of other people.” The area has a low tolerance for natural resource degradation. The desired conditions for Settles Bridge highlight the desire to have a quality land-based experience to complement the existing water-based experiences. Visitors to Settles Bridge can expect to “encounter other users with some frequency.”

Management concerns in Settles Bridge include unauthorized activities occurring in and around the parking lot, including “hot rodding,” dumping, littering, graffiti, and vandalism. Park managers are also concerned with encounters between humans and wildlife as well as visitor safety related to people jumping off the historic bridge. Deer poaching along the park boundary is also a concern. Monitoring the incidences of vandalism at cultural resources indicator will be important to achieving desired conditions at Settles Bridge.

LIMITING ATTRIBUTE

Trail erosion into the streams and river is the attribute that most constrains the Settles Bridge trail system’s ability to accommodate use. As the area receives more visitation, more soil destabilization and erosion occur in this area, leading to runoff into the unit’s streams and the Chattahoochee River. This attribute is a barrier to achieving the goal of sustainable trails and may threaten the desired condition of a low tolerance for natural resource degradation. These impacts are also closely related to crowding and congestion, which at select times may exceed the desired conditions that allow for a moderate-to-high probability of encountering others.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified above current use levels of 225 people per day using the Settles Bridge trail system. Generally, while the parking lot area has issues unrelated to trail use and concerns exist about river use, the actual trail use at Settles Bridge is not believed to threaten desired conditions or the limiting attribute at current use levels. Therefore, the visitor capacity allows room for growth.

MANAGEMENT STRATEGIES

- Partner with Gwinnett County to encourage connectivity between the county’s Settles Bridge Park and the NPS Settles Bridge unit. This strategy includes physical connectivity as well as integration of signage and wayfinding devices.
- Formalize parking spaces in the lot to increase parking efficiency and discourage unauthorized activities.
- Explore a potential increase in the Settles Bridge parking lot size and improving circulation within the parking lot.
- Explore moving the Settles Bridge parking lot further away from the river.
- Improve drainage in the Settles Bridge parking lot to improve ease of access to trails.
- Increase the law enforcement presence on peak use days to address unauthorized activities occurring in the Settles Bridge parking lot. Partner with the Gwinnett County Police Department to increase the multiagency presence.

McGinnis Ferry

ANALYSIS AREA

This analysis area includes the river-adjacent corridor of the McGinnis Ferry unit in the area rezoned as Natural Area Recreation.

EXISTING DIRECTION AND KNOWLEDGE

Since this unit contains no official trails, it currently has little to no visitor use, estimated at 15 people per day. This use is associated with people walking in from surrounding neighborhoods on social trails. Park staff has observed visitors using the area in the morning or late afternoon, before and after typical work hours.

Most of the unit will remain in the Natural Zone to preserve the buffer between the river and adjacent housing developments, which includes sensitive wetlands. In the Natural Zone, tolerance for resource degradation will be very low. Under this plan, the existing utility corridor would

be rezoned to Natural Area Recreation to help achieve connections with regional trail networks. In the future, this corridor could provide a critical connection for the potential RiverLands greenway. Also in this zone, “the probability of encountering other visitors will be moderate to high.” A greenway (if constructed) would provide a more social experience.

Management concerns in McGinnis Ferry include additional social trail use (if people try to access the future greenway from the neighborhoods west of the unit), potential conflicts in the boat ramp parking lot between boaters and visitors accessing the future greenway, and conflicts between pedestrians and bicyclists on the greenway. Therefore, monitoring the trail condition (width and depth), social trails, and complaints about user conflicts will be important to achieving desired conditions at McGinnis Ferry.

LIMITING ATTRIBUTE

Impacts to the sensitive wetlands in the Natural Zone is the attribute that most constrains the area’s ability to accommodate use. If the proposed greenway corridor is built in the Natural Area Recreation Zone, visitors accessing the greenway from surrounding neighborhoods could use and create social trails when crossing through the Natural Zone. As visitation in the area increases, more vegetation trampling, soil destabilization, and impacts to the wetlands can occur. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired condition of a very low tolerance for natural resource degradation.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at higher use levels than the area currently has of 50 people per day. Since no official trails are currently in this unit and a new sustainable trail will be considered in the future, the number of people in this unit will increase under this visitor capacity.

MANAGEMENT STRATEGIES

- Establish a separate parking lot at north end for a dedicated greenway and boat ramp parking access.
- Design the greenway to minimize erosion. Add trail curbing to prevent social trailing.
- Install maps and signage about various destinations in the unit.
- Educate park visitors about the new opportunities in this unit.

Suwanee Creek

This analysis area includes the entire Suwanee Creek unit.

EXISTING DIRECTION AND KNOWLEDGE

This analysis area currently has no authorized trails; however, visitor use does occur on unauthorized trails. This use is estimated at 375 people per day. According to fitness data on Strava Metro, this use primarily follows a social trail along the creek down to the river, where it meets a “t-intersection” and travels either way along the river. Since the beginning of the trail is behind an access gate controlled by a local homeowners’ association, most of these visits are presumably local residents out for a walk, hike, or run.

Under the action alternative, there would continue to be no authorized trails in this unit due to a lack of public access to the trail system. The main part of the unit is in the Natural Zone, while the Rogers Bridge portion is in the Historic Resource Zone. Per the desired conditions, “this unit does not have a desired trail-based visitor experience.” As no formal land-based public access exists for this unit, management of Suwanee Creek would be primarily as a buffer zone to protect the riverbank from adjoining development. The area would also have “minimal to no development.”

The Suwanee Creek unit has very sensitive cultural resources and monitoring the “number of incidences of vandalism at cultural resources” indicator will be important to achieving desired conditions.

LIMITING ATTRIBUTE

Sensitive natural and cultural resources and a lack of legal public land-based access are the attributes that most constrain the Suwanee Creek unit's ability to accommodate use. Desired conditions call for the unit to serve as buffer zone to protect natural resources from adjoining development and prescribe that there would be minimal to no development.

VISITOR CAPACITY

Given the unit's role as a buffer zone and the lack of public access or authorized trail system, the visitor capacity is identified at 10 people per day entering the Suwanee Creek unit. The visitor capacity is relatively low, as no infrastructure exists to sustainably support more visitation to the unit. However, some visitation is inevitable as local residents make their way onto social trails, and this low level of visitation is unlikely to harm sensitive resources.

MANAGEMENT STRATEGIES

- Avoid publicizing land-based recreational activities in Suwanee Creek.
- Discourage the creation of social trails by monitoring the "number of social trails" indicator.
- Monitor for any unacceptable impacts to cultural resources through monitoring the "incidences of vandalism at cultural sites" indicator.
- Educate local residents about desired conditions for Suwanee Creek and encourage "Leave No Trace" land ethics.

Abbotts Bridge ANALYSIS AREA

This analysis area includes the entire trail system in the Abbotts Bridge unit.

EXISTING DIRECTION AND KNOWLEDGE

Trail use at Abbotts Bridge comprises predominately river users, including anglers, tubers, and visitors using the concession site. The existing pavilion draws use as a picnic site and the restroom draws use as well. Use is concentrated

along the river access points. Visitation on the trails follows the two-peak pattern described above, with peaks around 7:00 a.m. and 5:00 p.m. Use of this area is moderately high when compared to other units. "Current trail use" is estimated at 50 people per day (see table E-3).

Under the action alternative, most trails in Abbotts Bridge would be in the Developed Zone, with some trails in the Natural Area Recreation Zone. Trails in the Developed Zone provide "convenient access to park buildings" and "high probability of encountering others," while trails in the Natural Area Recreation Zone have a moderate-to-high "probability of encountering other visitors," along with a low-to-moderate feeling of "closeness to nature." The desired conditions for Abbotts Bridge provide for a "family-friendly and group-friendly atmosphere" in a "relatively manicured" area with "flat and easy" trail opportunities.

Management concerns at Abbotts Bridge include trail flooding, trail damage, and social trailing, as visitors access the river for fishing and tubing. Visitor use conflicts occur between pedestrians and river users. Therefore, monitoring the trail condition and social trailing indicators will be important to achieving desired conditions at Abbotts Bridge.

LIMITING ATTRIBUTE

The floodplain is the attribute that most constrains the Abbotts Bridge trail system's ability to accommodate use. Due to the flat topography of this unit, sustainable trail alignment is almost impossible, and the area regularly floods. As visitation in the area increases, the use of flooded trails results in increased trail damage and trail braiding around flooded areas. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired condition of a relatively manicured area with flat and easy trail opportunities.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 125 people per day using the Abbotts Bridge trail system. As

the mileage available increases from 0.4 miles to 1.4 miles under the action alternative, the number of people per mile would decrease under this visitor capacity. This visitor capacity, along with the management strategies outlined below, will allow for the desired conditions of a relatively manicured area with flat and easy trail opportunities to be achieved.

MANAGEMENT STRATEGY

- Educate park visitors about the new trail opportunities in this unit to alleviate pressure on river-based activities.

ADAPTIVE MANAGEMENT STRATEGY

- Consider moving the trailhead away from the river access to separate user groups and reduce frequency of visitor conflicts.

Medlock Bridge

ANALYSIS AREA

This analysis area includes the entire trail system in the Medlock Bridge unit.

EXISTING DIRECTION AND KNOWLEDGE

Trail use at Medlock Bridge consists of hikers, trail runners, and anglers. Walkers and anglers tend to follow small, short social trails to the riverbank. The system is particularly popular with couples and also gets a fair amount of use from picknickers and dog walkers. “Current trail use” is estimated at 130 people per day (see table E-3).

Under the action alternative, all of Medlock Bridge’s trails would be in the Developed Zone, where the area should have ample opportunities for “social experiences, and a high probability of encountering other visitors or park staff.” The desired conditions for Medlock Bridge describe a trail system that provides feelings of ease and relaxation, and a respite from the urban surroundings will also have a developed feel.

Management concerns at Medlock Bridge include illicit activities in the parking lot, including vandalism to interpretive waysides and other media as well as litter. Heavy social trailing to the riverbank is affecting soil stability. Therefore, monitoring the social trail indicator

as well as the trail condition indicators will be important to achieving desired conditions.

LIMITING ATTRIBUTE

The ability to have a restful experience with ample opportunities for respite, ease, and relaxation as described in the desired conditions, is the attribute that most constrains the Medlock Bridge trail system’s ability to accommodate use. As visitation in the area increases, the ability to experience this miniature escape from civilization would eventually be lost. This limitation is related to impacts that may occur with increasing user frequency along the riverside trail, including more soil destabilization that contributes to runoff and sedimentation into the Chattahoochee River. While the zoning desired conditions for Medlock Bridge do include a more social setting, visitation should not be allowed to increase to the point that desired conditions for a restful experience are not being achieved.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 130 people per day using the Medlock Bridge trail system. As the mileage available increases modestly from 1.5 miles to 1.6 miles under the action alternative, the number of people per mile would decrease slightly under this visitor capacity. As Medlock Bridge occasionally experiences conditions that verge upon violating desired conditions for a restful atmosphere during busy times like fishing season, identifying a visitor capacity that would result in a slight decrease in congestion on the trails is appropriate.

MANAGEMENT STRATEGIES

- Increase signage that communicates the necessity of parking in designated areas.
- Reengineer parking lot to include more boat parking spaces in northern end to decrease impacts on trail parking.
- Increase enforcement of parking outside of designated areas. A visitor use assistant or volunteer could help with enforcement at peak times.

Jones Bridge ANALYSIS AREA

This analysis area includes the northern section of the trail system in the Jones Bridge unit, extending south until the trails around the Chattahoochee River Environmental Education Center.

EXISTING DIRECTION AND KNOWLEDGE

Trail use at Jones Bridge consists primarily of access to the river by anglers, waders, and swimmers. Hiking is a secondary use at Jones Bridge. Visitors often swim across the river to the island for sunbathing. The boat ramp and restroom draw visitors to this unit. Visitation on the trails tends to follow the two-peak pattern described above, with peaks around 9:00 a.m. and 6:00 p.m. Use of this area is moderate to high, with most use concentrated along river access points. “Current trail use” is estimated at 750 people per day (see table E-3).

All trails in Jones Bridge analysis area are in the Natural Area Recreation Zone, where the “probability of encountering other visitors would be moderate to high,” while the “degree of isolation and closeness would be limited by the presence of other people.” The desired conditions for Jones Bridge include “diverse social opportunities” where visitors can hike, picnic, wade, and fish. This area is considered one of the “best opportunities for visitors to get into the river.”

Management concerns in Jones Bridge include unsustainable trails, unauthorized parking, illegal dumping, and vandalism. Visitor conflicts occur between river user groups with competing recreation types. Therefore, monitoring the trail condition, social trailing, unauthorized parking, and visitor conflicts indicators will be important to achieving desired conditions at Jones Bridge.

LIMITING ATTRIBUTE

Congestion is the attribute that most constrains the Jones Bridge trail system’s ability to accommodate use. As the area’s visitation increases, more users will compete for access to the river. These impacts are a barrier to achieving

the desired condition of providing one of the best opportunities for visitors to get into the river.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 750 people per day using the Jones Bridge trail system. As the mileage available increases by 0.2 miles under the action alternative, the number of people per mile would decrease under this visitor capacity. This lower number of people per mile would relieve some of the pressure on trail conditions so that the trail system better achieves desired conditions.

MANAGEMENT STRATEGIES

- Educate park visitors about trail opportunities at the Chattahoochee River Environmental Education Center, just south of Jones Bridge.
- Install signs at the parking area informing visitors that if parking at Jones Bridge is full, they can recreate at the nearby Chattahoochee River Environmental Education Center.
- Increase enforcement of regulations at this unit.

Jones Bridge – South (Chattahoochee River Environmental Education Center) ANALYSIS AREA

This analysis area includes the southern section of the trail system in the Jones Bridge unit, including the trails around the Chattahoochee River Environmental Education Center (CREEC).

EXISTING DIRECTION AND KNOWLEDGE

Trail use at the Chattahoochee River Environmental Education Center consists of visitors to the center, hikers, and overnight campers (the park hosts limited camp programs in the meadow). Visitors are somewhat concentrated around the CREEC building, which is closed to the public, but public visitors spread out in the trail network. This area experiences a high level of neighborhood access from local residents. Visitation on the trails tends to follow

the two-peak pattern described above, with peaks around 10:00 a.m. and 6:00 p.m. Use of this area is somewhat lower than in other units. “Current trail use” is estimated at 325 people per day (see table E-3).

All trails at the education center are in the Developed Zone, which provides “convenient access to park buildings” and “high probability of encountering others.” The desired conditions for the center include a “family-friendly and group-friendly atmosphere,” with opportunities for “solitude and tranquility” and “educational and interpretive experiences” that would serve “novice hikers.”

Management concerns at the education center include social trailing, trail braiding, wayfinding issues, and boundary concerns with neighboring landowners. Park visitors often hike on park trails at the center and cross onto neighboring private land, resulting in visitor conflicts. Therefore, monitoring the trail condition, social trailing, unauthorized parking, and visitor conflicts indicators will be important to achieving desired conditions at Jones Bridge.

LIMITING ATTRIBUTE

Wayfinding and boundary concerns are the attribute that most constrains the CREEC trail system’s ability to accommodate use. As visitation in the area increases, more social trailing, wayfinding issues, and visitors trespassing onto private neighboring land are likely to occur. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired condition of a family-friendly and group-friendly atmosphere.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at higher use levels than the Chattahoochee River Environmental Education Center currently has, at 600 people per day. Under the action alternative, no additional miles of trail would be constructed in this area. Congestion on the trails is not a management concern and the park staff feel that this area is currently underused by the public. Management

concerns related to the limiting attribute would be addressed through the management strategies outlined below to ensure that this trail system better achieves desired conditions.

MANAGEMENT STRATEGIES

- Promote this unit for its trail opportunities.
- Educate visitors that some trails lead onto private property in this area.
- Install signs on NPS land marking the NPS boundary, where land beyond the sign is trespassing onto private property.
- Partner with neighboring private landowners to install signs on their property to communicate that their land is private property that is closed to the public.

ADAPTIVE MANAGEMENT STRATEGY

- Consider installing a temporary or permanent restroom at CREEC to support the public (restroom inside CREEC building is closed to the public).

Holcomb Bridge

This analysis area includes the entire trail system in the Holcomb Bridge unit.

EXISTING DIRECTION AND KNOWLEDGE

Trail use at Holcomb Bridge consists of dog walkers and hikers. This analysis area experiences a high level of neighborhood access from local residents. Trail use data is limited as this is a relatively new unit. Use of this area is very low. “Current trail use” is estimated at 60 people per day (see table E-3).

Trails in Holcomb Bridge are currently in the Natural Area Recreation Zone. Under the action alternative, this unit would be rezoned to the Natural Zone. Trails in the Natural Zone provide a “relatively undisturbed environment” with a “low probability of encountering many other people.” The desired conditions for Holcomb Bridge provide “undisturbed forestland” with opportunities for “short, easy strolls” serving fitness walkers, dog walkers, and more.

Management concerns at Holcomb Bridge include trail flooding, trail damage, and social trailing. The topography at Holcomb Bridge is fairly flat, limiting opportunities for sustainable trail alignment. Therefore, monitoring the trail condition and social trailing indicators will be important to achieving desired conditions at Holcomb Bridge.

LIMITING ATTRIBUTE

Poor trail conditions is the attribute that most constrains the Holcomb Bridge trail system's ability to accommodate use. Due to the flat topography of this unit, sustainable trail alignment is challenging. As visitation in the area increases, the use of flooded trails results in increased trail damage and trail widening as visitors avoid muddy areas. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired condition of an undisturbed forestland.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at higher use levels than Holcomb Bridge currently has at 150 people per day. Under the action alternative, no additional trails would be constructed in this unit. This visitor capacity, along with the management strategies outlined below, will allow for the desired conditions of an undisturbed forestland with short easy strolls to be achieved.

MANAGEMENT STRATEGIES

- Promote this area through marketing, social media, and website materials.
- Work with interpretation staff to direct visitors to this area.
- Add trail maps for the Holcomb Bridge unit on the park website.
- Consider holding an official opening of this unit (i.e., ribbon cutting) to publicize this unit and its trail opportunities.
- Partner with the City of Sandy Springs to hang a NPS sign under the Sandy Springs sign to inform visitors of recreational opportunities here.

- Install maps and wayfinding signs on the trails here.

Island Ford

ANALYSIS AREA

This analysis area includes the entire trail system in the Island Ford unit.

EXISTING DIRECTION AND KNOWLEDGE

Trail use on Island Ford consists of hikers (some of whom are part of large meetup groups such as the Atlanta Outdoor Club), trail runners, and anglers. Walkers and anglers are attracted to the trails along the river and the pond. The pond also attracts families and children, and trails down to the field see a lot of people headed to a picnic.

Visitation on the trails tends to be fairly level throughout the day from 9:00 a.m. to 4:00 p.m., with only slight peaks mid-morning and afternoon. "Current trail use" is estimated at 650 people per day (see table E-3).

Under the action alternative, most of the trails would be in the Natural Area Recreation Zone, though trails near the Hewlett Lodge and Park Headquarters are in the Historic Resource Zone. On the trails, the "probability of encountering other visitors would be moderate to high," while the "degree of isolation and closeness would be limited by the presence of other people." The Historic Resource Zone has a low tolerance for cultural resource degradation. The desired conditions for Island Ford highlight opportunities for "large, loosely organized hiking groups" as well as smaller groups and social experiences with friends and family. These desired conditions also highlight opportunities for cultural experiences.

Management concerns in Island Ford include shortcutting trails in the cliff areas affecting thin fragile soils, exposed roots and related safety concerns, trail widening along the river, and rock scrambling around significant rock outcrops. Therefore, monitoring the trail condition and social trail indicators will be important to achieving desired conditions at Island Ford.

LIMITING ATTRIBUTE

Impacts to resources, including vegetation, soils, streambanks, and historic rock shelters, in the area near the Hewlett Lodge is the attribute that most constrains the Island Ford trail system's ability to accommodate use. As visitation in the area increases, more vegetation trampling, soil destabilization, and impacts to the rock shelters occurs. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired condition of a low tolerance for cultural resource degradation. These impacts are also closely related to crowding and congestion in the area around Hewlett Lodge, which at select times may exceed the desired conditions which allow for a moderate-to-high probability of encountering others, large groups, social experiences, and a limited degree of isolation.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 650 people per day using the Island Ford Trail system. As the mileage available increases from 4.9 miles to 6.5 miles under the action alternative, the number of people per mile would decrease under this visitor capacity. This lower number of people per mile would relieve some of the resource challenges and crowding in the Hewlett Lodge area so that the trail system better achieves desired conditions with 650 people per day on the trails.

MANAGEMENT STRATEGIES

- Increase visitor awareness about opportunities in the northern part of the Island Ford unit. Disperse use to this "hidden gem."
- Encourage use of alternative parking lot away from Hewlett Lodge. Consider addition of a restroom in the northern parking lot to reduce congestion around the Hewlett Lodge.
- Install a parking barrier along the hairpin turn to improve visitor safety.
- Redistribute or reconfigure parking to allow parking at Hewlett Field in a way that does not disturb the viewshed of the field, as described in the cultural landscape report.

- Post signs indicating when a particular parking lot (Hewlett Lodge area) is at capacity. Encourage visitors to return at an off-peak time.

Vickery Creek

ANALYSIS AREA

This analysis area includes the entire trail system in the Vickery Creek unit.

EXISTING DIRECTION AND KNOWLEDGE

Trail use at Vickery Creek consists of a wide assortment of pedestrian users who have different motivations, including hikers and trail runners going for a longer excursion on multiple loops, walkers looking for a quick way to get outdoors and have some fun, visitors to the Riverside Park who want to enjoy the Big Creek environs, and local residents commuting through the unit on the way to and from school or work. Overall, trail use is concentrated along the western side of the unit along Big Creek and the covered bridge, as well as the mill area.

Visitation on the trails tends to follow a standard bell curve, with a peak around 2:00 p.m. This visitation is especially true along the western side of the unit along Big Creek. "Current trail use" is estimated at 1,200 people per day (see table E-3). During the busiest hours of the day, between noon and 3:00 p.m., about 11% of daily visitation enters the unit each hour, which means that about 130 people per hour are entering the unit at these peak times.

Under the action alternative, most of the trails in Vickery Creek would be in the Natural Area Recreation Zone, with the Allenbrook area included in the Historic Resource Zone. Within the Natural Area Recreation Zone, the "probability of encountering other visitors would be moderate to high," while the "degree of isolation and closeness to nature would be limited by the presence of other people." However, opportunities for solitude would occur at certain times of the day or season. On the Allenbrook side of the unit, there is a low tolerance for cultural resource degradation.

The desired conditions for Vickery Creek describe opportunities “to experience the trails in small groups of friends and families” and “safe opportunities to hike along and fish in Big Creek.”

Management concerns at Vickery Creek include unauthorized activities, such as dogs off leash and bike riding, as well as visitors becoming lost when they travel through the unit and are not prepared for a walk in the forest. A general concern exists about crowding along the western edge of the unit near Big Creek. Park staff notes that these areas are primarily accessed from a parking lot managed by the City of Roswell, which encourages use in the area. This parking area frequently fills, leading to crowded trails and high encounter rates near the creek as visitors look for ideal photo opportunities and to explore the City Mills Dam and covered bridge. Due to these issues, monitoring the trail conditions, parking, social trails, vandalism at cultural sites, and conflict with dogs indicators will be important.

LIMITING ATTRIBUTE

The amount of crowding and congestion along the Big Creek corridor (the west side of unit) is the attribute that most constrains the Vickery Creek trail system’s ability to accommodate use.

As visitation in the area increases, the crowding and congestion may eventually violate desired conditions for moderate-to-high encounters. Under current conditions, there is an unequal distribution of visitation across the unit, with more visitors on the west side and fewer along the east side. In some ways, this helps to achieve the desired conditions for opportunities for solitude at certain times of the day or seasons when there generally would not be opportunity for solitude or closeness to nature. However, the integrity of the park experience on the west side of the unit must be maintained to some degree, with encounter rates that are moderate to high rather than high to extreme. Currently, large groups cause occasional “traffic jams” on the trail that are difficult to pass and contribute to trails exceeding the trail width indicator.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 130 people per hour using the Vickery Creek Trail system. The capacity is identified at current use levels with the understanding that there is a need to better distribute this use across the unit to ensure desired conditions for resources and visitor experiences are achieved (since they are not being achieved at certain times on the western side of the unit under current use levels). As the mileage available increases from 7.1 miles to 7.8 miles under the action alternative, the number of people per mile would decrease under this visitor capacity. This lower number of people per mile per hour would improve the achievement of desired conditions.

MANAGEMENT STRATEGIES

- Install directional wayfinding signage encouraging more visitation to the eastern side of the Vickery Creek unit and improve flow of visitors through the western side of the unit. Increase maps and signage about various destinations away from highly developed sites. Within the western side of the unit, include targeted directional signage that shows the way to key destinations, such as the covered bridge, mill, Allenbrook, and others.
- Improve visitor awareness of the relative remoteness of the unit’s interior to encourage visitors to be better prepared for the challenges present.
- Develop suggested hiking routes for the Vickery Creek unit that align with the City of Roswell tourism market.
- Provide information to visitors on sites that are likely to be busy so they know of those conditions before they arrive.
- Increase enforcement of parking outside of designated areas. A visitor use assistant or volunteer could help with enforcement at peak times.

Gold Branch

ANALYSIS AREA

This analysis area includes the entire trail system in the Gold Branch unit.

EXISTING DIRECTION AND KNOWLEDGE

All trails in this unit are in the Natural Zone. Visitors will be able to enjoy a “relatively undisturbed environment” with a “relatively low probability of encountering many people” during their time in the park. Visitors would feel “farther away from comforts and conveniences” than other units of the park. The desired conditions for trails in Gold Branch emphasize a “low-density backcountry mountain feel” and a “diverse range of challenging trail experiences.” This unit will offer “scenic opportunities for birding, hiking, and trail running, including longer duration hikes and runs that include both ridgetop and water-adjacent trail experiences.”

Trail use in Gold Branch mainly consists of nearby residents from adjacent neighborhoods and small outdoor meetup groups. Walkers and anglers are attracted to the trails along Bull Sluice Lake and the thriving botanical areas along streams in this unit. The unit is popular for visitors with dogs. In warm-weather months, some visitors tend to use this unit’s trails to access Bull Sluice Lake and swim across to the other side, which presents visitor safety concerns for park management.

Visitation on the trails tends to increase after work hours during weekdays. A significant spike in visitation and trail use typically occurs on weekend days, with parking lots often filling up by late morning. Regardless of day of the week, visitors tend to spread out across the unit’s trails. Current trail use is estimated at 425 people per day (see table E-3).

Management concerns in this unit include wildlife poaching, trail erosion along Bull Sluice Lake, visitor safety, occasional harmful algal blooms, unauthorized parking on peak weekend days, vandalism of prehistoric cultural resources, spatial concentration of recreational fishing in certain parts of the unit, and a steady increase

in recreational use in recent years. Therefore, monitoring the trail condition, unauthorized parking, cultural resource vandalism, and visitor-dog conflict indicators will be important to achieving desired trail conditions in the Gold Branch unit.

LIMITING ATTRIBUTE

The opportunity for solitude is the attribute that most constrains the Gold Branch trail system’s ability to accommodate higher levels of visitor use while still achieving desired conditions. Visitation to this unit has steadily increased in recent years, which threatens the unit’s ability to sustain a “quieter and more tranquil setting.” Many visitors who frequent Gold Branch have voiced their concern to park staff that the solace of this unit is threatened due to higher levels of visitation.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 425 people per day using the Gold Branch trail system. As the mileage available slightly increases from 4.9 miles to 5.2 miles under the action alternative, the number of people per mile would decrease under this visitor capacity. This change would allow visitors to continue to spatially spread out across the trail system and better achieve the desired conditions for a quiet and tranquil visitor experience.

MANAGEMENT STRATEGIES

- Partner with local meetup groups to voluntarily redistribute use to off-peak times.
- Increase educational signage for proper dog behavior (e.g., keeping dogs leashed, bagging dog waste, being aware of potential harmful algal blooms).
- Pilot permitting for larger recreational groups if trail usage regularly exceeds visitor capacity.
- Increase parking enforcement for improperly parked vehicles.
- Monitor erosion on riverside trails and realign trails adaptively to prevent sloughing.

Johnson Ferry North

ANALYSIS AREA

This analysis area includes the northern section of the trail system in the Johnson Ferry unit, from Johnson Ferry Road to the northern edge of the unit.

EXISTING DIRECTION AND KNOWLEDGE

Trail use at Johnson Ferry North consists of hikers, dog walkers, and anglers. Use is equally distributed between trails and river access points. The existing concession, boat launch, and boat ramp draw use to this area. Visitation on the trails tends to follow the two-peak pattern described above, with peaks around 7:00 a.m. and 6:00 p.m. Use of this area is slightly lower than in other units and is often used when its neighboring Cochran Shoals is busy. “Current trail use” is estimated at 500 people per day (see table E-3).

Trails near the Johnson Ferry North Trailhead are in the Developed Zone, while trails further to the north are in the Natural Area Recreation Zone. Any trails in the Hyde Farm area would be addressed under a separate planning effort. The Developed Zone provides “convenient access to park buildings” and “high probability of encountering others;” the Natural Area Recreation Zone provides “moderate-to-high probability of encountering other visitors” along with a low to moderate feeling of “closeness to nature.” The Historic Resource Zone provides visitors with the opportunity to “enjoy and understand the value” protected cultural resources. The desired conditions for Johnson Ferry North include plentiful cultural experiences and “diverse trail-based opportunities,” where visitors can rent rafts and kayaks through concession.

Management concerns at Johnson Ferry North include impacts from utility work and visitor conflicts. With multiple utility lines in this area, utility work results in trail disturbance, vegetation

trampling, and safety issues with visitors around heavy machinery. Visitor conflicts occur between hikers and bicyclists and off-leash dog use is a concern in this area. The public isn’t currently aware that bicycles are not allowed in this unit. Therefore, monitoring the trail condition and visitor conflicts indicators will be important to achieving desired conditions at Johnson Ferry North.

LIMITING ATTRIBUTE

Spatial constraints that include creek topography and the limited extent of NPS-managed land at Johnson Ferry North limit the trail system’s ability to accommodate use.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at higher use levels than Johnson Ferry North currently has at 1,000 people per day. Under the action alternative, no additional miles of trail would be constructed in this area. Congestion on the trails is not a management concern and the park staff feels that this area is currently underused by the public. Management concerns related to the limiting attribute would be addressed through the management strategies outlined below to ensure that this trail system better achieves desired conditions.

MANAGEMENT STRATEGIES

- Promote this unit and its trail opportunities for more solitude experiences.
- Work with interpretation staff to direct visitors to this area.
- Educate the public that bicycles are not allowed in this unit.
- Install signs clearly explaining that bicycles are not allowed on these trails. Bicycles are only allowed on multiuse trails.
- Install signs clarifying the NPS boundary as one enters Hyde Farm.

Johnson Ferry South

ANALYSIS AREA

This analysis area includes the entire trail system in the southern portion of the Johnson Ferry unit.

EXISTING DIRECTION AND KNOWLEDGE

Trail use at Johnson Ferry South consists of large and small groups walking south to the pavilion, hikers that tend to travel north from the parking lot on the trail before exiting the unit via a relict road, some bird watchers, and occasional fishing access. The area was historically used for education workshops as well. Per Strava Metro data, fitness-oriented users tend to travel on the northern section of trail more than the southern section. At times, a fair amount of use occurs in the parking lots for people who are travelling to either Columns Drive or Johnson Ferry North and use the Johnson Ferry South lot as a form of overflow parking.

Visitation on the trails tends to be rather level throughout the day, though it is typically busier in the morning than afternoon. “Current trail use” is estimated at 200 people per day (see table E-3).

Under the action alternative, the southern portion of the Johnson Ferry unit would be in the Rustic Zone. On the trails, visitors should find an “undisturbed environment” and be able to enjoy nature. “Opportunities for closeness to nature” and “tranquility” would also be common. The desired conditions for the southern portion of Johnson Ferry describe a “tranquil and relaxed atmosphere” with opportunities to “explore wetland complexes.” A low to moderate level of encounters with other visitors and park staff could be expected except for the social activities at the pavilion.

Management concerns for the southern portion of Johnson Ferry include a number of unauthorized and illegal activities that occur in the parking lot, including dumping and littering, as well as illegal digging and ground disturbance. Managers are also aware that the wetlands in this area are still growing, sometimes impacting the trail system. As visitors sometimes illegally

ride bicycles through this unit, monitoring the visitor complaints of bicycle-pedestrian conflicts indicator will be essential to ensuring that desired conditions for tranquility are being met.

LIMITING ATTRIBUTE

Preservation of opportunities for tranquility consistent with desired conditions is the attribute that most constrains the southern portion of Johnson Ferry trail system’s ability to accommodate use. As visitation in the area increases, fewer opportunities for tranquility would occur, especially as visitors are confined to the parking lot, a small trail system, and the pavilion area due to the expanding wetlands. If the area started to have too many visitors at one time, the “relaxed atmosphere” with opportunities to explore wetland complexes would not be present.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified above current use levels of 400 people per day using the Johnson Ferry South trail system. This significant increase allows for plenty of room for growth.

MANAGEMENT STRATEGIES

- While ample room for growth does not exist at Johnson Ferry South, the unit would not be actively promoted due to the quality of visitor experiences available there.
- Provide information about wetland resources at Johnson Ferry to enhance opportunities for enjoyment of this resource.
- Encourage the use of Johnson Ferry South when the adjacent Johnson Ferry North and Cochran Shoals units are very busy.
- Install a security camera to address illegal dumping and other unauthorized activities in the parking lot.
- Collaborate with local jurisdictions to increase the frequency of law enforcement patrols at times when illegal visitor behavior is most common.

Cochran Shoals

ANALYSIS AREA

This analysis area includes the trail system in the portion of the Cochran Shoals unit that lies west of the Chattahoochee River—specifically, the Sope Creek, Columns Drive, and Gunby Creek areas. This analysis area includes the Fitness Loop.

EXISTING DIRECTION AND KNOWLEDGE

Trail use at Cochran Shoals is generally much heavier than at other units of the park’s trail system. In addition to hikers, trail runners flock to this unit. In fact, several local high school track and cross-country teams use the area to trail under special use permits. Bikers heavily use the Sope Creek trail system, the only area in the park actively managed for bikes. Anglers can be found all along the trail system near the river, birders are frequently found along the unit’s board walks, and botanist groups also use the area. Interpretive and educational programming is common in Cochran Shoals, especially near Sibley Pond. The Fitness Loop, raised boardwalk from the Interstate North Trailhead towards the Fitness Loop, Sope Creek Mill ruins, Sibley Pond, and cemetery are all popular destinations within Cochran Shoals.

Visitation patterns on the trails follows the two-peak visitation pattern described in the introduction above. “Current trail use” is estimated at 5,550 people per day (see table E-3). During the busiest hours of the day, around 4:00 to 5:00 p.m., about 10% of daily visitation enters the unit each hour, which means that about 550 people per hour are entering the unit at these peak times.

Under the action alternative, most of the Cochran Shoals trails would be in the Natural Area Recreation Zone, while trails near the Sope Creek Mill ruins would be in the Historic Resource Zone. On the trails, the “probability of encountering other visitors would be moderate to high,” while the “degree of isolation and closeness would be limited by the presence of other people.” A low tolerance for cultural

resource degradation exists in the Historic Resource Zone. The desired conditions for Cochran Shoals describe “a fun, social, fitness-oriented trail system” that welcomes a wide diversity of visitors to this “urban backyard.” A “high density of visitors would be expected at most times, especially on weekends” and encounters with others would be “consistent and frequent.”

Management concerns at Cochran Shoals run the gamut and include all the issues the indicators and thresholds are designed to monitor. For instance, large groups frequently use the Cochran Shoals trails and travel side by side, contributing to trail widening and vegetation damage. Roadside parking is a significant issue, particularly at Columns Drive and Interstate North Trailheads, and parked cars are a common target for thieves. Informal access via unauthorized social trails is an issue throughout the unit, with many accesses stemming from apartment complexes around the unit. The Sope Creek ruins are often vandalized, and visitor conflicts are common here. This issue is particularly applicable on the multiuse trails, where bicyclists sometimes travel after rain events and on the Sibley Pond trail where bicyclists and pedestrians frequently come into contact. General resource damage, including plant poaching, due to high volumes of visitation is a concern at Cochran Shoals, and this concern is exacerbated by the unit’s connectivity to regional trail systems, which increases the recreational demand on the trail system.

LIMITING ATTRIBUTE

Visitor impacts to streambank resources are the attribute that most constrain the Cochran Shoals trail system’s ability to accommodate use. As visitation in the area increases, more users go to the creek sides, and these riparian areas show signs of traffic, including soil and vegetation loss. Areas along Sope Creek are particularly affected, where the soils are not suitable for the level of visitation they receive. The bank destabilization contributes to water turbidity and quality issues in the park and is a barrier to achieving the goal

of sustainable trails. Damage to the Sope Creek ruins—including social trails around the ruins, visitors climbing on the ruins and moving rocks, and some instances of graffiti—also limits the Cochran Shoals area’s ability to accommodate visitor use and threatens the desired condition for a low tolerance for cultural resource degradation in the Historic Resource Zone. Impacts to visitor experience from conflicts between bicyclists and pedestrians, as well as dogs off leash, also contribute to limiting Cochran Shoals’ ability to accommodate use by threatening desired conditions for a fun and welcoming trail system.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 550 people per hour entering the Cochran Shoals trail system. To achieve desired conditions, fewer people at one time on each stretch of trail so the impacts to streambanks, issues at the Sope Creek ruins, and visitor conflicts are reduced. As the mileage available increases from 19.1 miles to 24.9 miles under the action alternative, the number of people per mile would decrease under this visitor capacity. While the Fitness Loop will remain popular, other areas will become less crowded due to the creation of new trails, thereby reducing pressure on soils, streambanks, and cultural resources. In addition, engineering improvements to the trail system would better enable it to accommodate current use levels sustainably.

MANAGEMENT STRATEGIES

- Emphasize the use of the text-for-status program so visitors know when trails are open to biking.
- Continue to educate visitors on why trails are closed and why they need to stay off trails after rain events.
- Formalize a bicycle volunteer in parks program to educate visitors on where and when it is appropriate to ride (i.e., not after rain events or on trails closed to bicycles).
- Increase roving, uniformed active engagement to help relay

educational messages to the public. A visitor use assistant or volunteer could continue to walk the trails as well.

- Increase education around fee compliance to help support park operations in this area.
- Consider additional areas for river overlooks to reduce erosion issues related to informal access points. Add overlooks as needed.
- Consider additional areas for river access points to reduce erosion issues related to informal access points. Add access points as needed.
- Consider adjusting the current bicyclist/pedestrian system from a directional system to bicycle-only days and pedestrian-only days or separating pedestrian use from bicycle use on the current multiuse trail system.

Cochran Shoals Powers Island

ANALYSIS AREA

This analysis area includes the trail system in the Powers Island area on the eastern side of the Chattahoochee River in the Cochran Shoals unit.

EXISTING DIRECTION AND KNOWLEDGE

The trails in Powers Island are popular with walkers. Slight peaks occur around 8:00 a.m., noon, and 5:00 p.m. Trail users share the same parking lot with river users (both private and concessioner users). Competition for parking peaks during the warmer summer months. Current trail use is estimated at 125 people per day (see table E-3).

The trails in the Powers Island area are in the Natural Area Recreation Zone, where a probability of encountering other visitors would be moderate to high. Tolerance for resource degradation will be low. The desired conditions for the Cochran Shoals unit as a whole state that a “high density of visitors would be expected at most times, especially on weekends. Encounters with other visitors would be consistent and frequent.”

Management concerns in Powers Island include a congested parking lot, trail width and depth from heavy visitor use on the trails nearest the parking lot, and damages to cultural and natural resources. Therefore, monitoring incidents of unauthorized parking, the trail condition, number of social trails, and incidents of damage to cultural resources indicators will be important to achieving desired conditions at Powers Island.

LIMITING ATTRIBUTE

Impacts to natural resources is the attribute that most constrains the Powers Island trail system's ability to accommodate use. Impact to natural resources include vegetation, soils, and riverbanks. As visitation in the area increases, more vegetation trampling, soil destabilization, erosion, and impacts to the sensitive natural resources occur. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired condition of a low tolerance for natural resource degradation.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 125 people per day. In the Powers Island area, some problematic trails would be restored, and a desirable loop around the perimeter would be created to attract more walkers and hikers. This change would result in a lower number of people per mile, which would relieve some of the resource challenges and crowding so that the trail system better achieves desired conditions with 125 people per day on the trails. However, no change to the parking lot will occur, so the area as a whole will not be able to accommodate additional use.

MANAGEMENT STRATEGIES

- Where possible, encourage visitors to use sites that can handle high volumes of use during peak use times.
- Use press releases/media before historically crowded weekends to prepare the public for crowds.
- Increase maps and signage about various destinations in and outside of highly developed sites.

- Provide information to visitors about sites that are likely to be busy so they know of those conditions before they arrive.
- Increase education and signage about parking in designated areas.
- Increase education and information during peak times about where to find available parking.
- Display information on park websites or social media, and direct park staff to communicate about areas that accommodate higher use when in contact with visitors.
- Post signs indicating parking is at capacity (return at a later, designated time).
- Use innovative technology or methods to communicate with the public about other opportunities that are available to them in or outside of the park.
- Designate some short-term parking spaces at key locations to ensure that a variety of people can visit the site over a day and use levels stay within the thresholds.
- Provide real-time information regarding parking and access opportunities (e.g., text alerts and radio station updates).
- Deploy intelligent transportation systems to provide visitors with information about parking lot status. This information would be conveyed to visitors before and/or upon entry to the frontcountry.
- Consider a temporary queuing system until more vehicles leave the area. Actions might include turning vehicles away.

Palisades East

ANALYSIS AREA

This analysis area includes the trail system on the eastern side of the Palisades unit.

EXISTING DIRECTION AND KNOWLEDGE

The trails in Palisades East are popular with people walking their dogs, hikers, trail runners, and people visiting the bamboo stand. The same two-peak visitation pattern seen on the Fitness Loop is also seen in Palisades East, with peak use

occurring from 6:00 a.m. to 9:00 a.m., and 6:00 p.m. to 7:00 p.m.; however, unlike the Fitness Loop, use at Palisades East is almost double in the morning what it is in the afternoon. This area is one of the more popular areas of the park. Current trail use is estimated at 1,175 people per day (see table E-3). During the busiest hours of the day, around 8:00 a.m. to 1:00 p.m., about 10% of daily visitation enters the unit each hour, which means that about 120 people per hour are entering the unit at these peak times.

Under the action alternative, the trails would be in the Natural Zone, where the level of encounters with other people would be low. In the Natural Zone, tolerance for natural resource degradation will be very low. Palisades East visitors would have “opportunities to connect with nature and experience solitude and relative peace and quiet, despite high visitor use at times.” Visitors would also have “opportunities to experience some of the most iconic scenery in the park as well as the biodiversity the Palisades have to offer.”

Management concerns in Palisades East include congested parking lots at Indian Trail and Whitewater, trail width and depth from heavy visitor use, dogs off leash, and conflicts between dogs and trail users. Therefore, monitoring incidents of unauthorized parking, the trail condition, and visitor complaints for conflicts with dogs indicators will be important to achieving desired conditions in Palisades East.

LIMITING ATTRIBUTE

Impacts to natural resources and the visitor experience are the attributes that most constrain the Palisades East trail system’s ability to accommodate use. Impact to natural resources include vegetation, soils, and riverbanks. As visitation in the area increases, more vegetation trampling, soil destabilization, and impacts to the sensitive natural resources may occur. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired condition of a very low tolerance for natural resource degradation. These impacts are also closely related to crowding and congestion in

the area, which at times may exceed the desired conditions which allow for the opportunity to “connect with nature and experience solitude and relative peace and quiet, despite high visitor use at times.”

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 120 people per hour. The total trail mileage in Palisades East would increase by 2.7 miles under the action alternative, so the number of people per mile would decrease under this visitor capacity. This lower number of people per mile would relieve some of the resource challenges and crowding so that the trail system better achieves desired conditions with 120 people per hour on the trails. In addition, the trail system would undergo a full-scale redevelopment and environmental restoration to create a sustainable, manageable trail system with a high diversity of quality trail experiences. This will relieve some of the resource challenges so that the trail system better achieves desired conditions. However, the parking lot will not change, so the area as a whole will not be able to accommodate additional use.

MANAGEMENT STRATEGIES

- Where possible, encourage visitors to use sites that can handle high volumes of use during peak use times.
- Use press releases/media before historically crowded weekends to prepare the public for crowds.
- Increase maps and signage about various destinations in and outside of highly developed sites.
- Provide information to visitors about sites that are likely to be busy so they know of those conditions before they arrive.
- Increase education and signage about parking in designated areas.
- Increase education and information during peak times about where to find available parking.
- Display information on park websites

or social media, and direct park staff to communicate about areas that accommodate higher use when in contact with visitors.

- Increase enforcement of parking outside of designated areas.
- Post signs indicating parking is at capacity (return at a later, designated time).
- Use innovative technology or methods to communicate with the public about other opportunities that are available to them in or outside of the park.
- Designate some short-term parking spaces at key locations to ensure that a variety of people can visit the site over a day and use levels stay within the thresholds.
- Provide real-time information regarding parking and access opportunities (e.g., text alerts and radio station updates).
- Deploy intelligent transportation systems to provide visitors with information about parking lot status. This information would be conveyed to visitors before and/or upon entry to the frontcountry.
- Consider a temporary queuing system until more vehicles leave the area. Actions might include turning vehicles away.

Palisades West ANALYSIS AREA

This analysis area includes the trail system on the western side of the Palisades unit.

EXISTING DIRECTION AND KNOWLEDGE

The trails in Palisades West are popular with people walking their dogs, hikers, trail runners, bicyclists, and large groups. The same two-peak visitation pattern that occurs on the Fitness Loop also occurs in Palisades West, with peak use occurring from 6:00 a.m. to 10:00 a.m. and 4:00 p.m. to 7:00 p.m.; however, unlike the Fitness Loop, use at Palisades West is almost double in the morning what it is in the afternoon. This area of the park is one of the more popular. Current trail use is estimated at 1,075 people per day (see table E-3). During the busiest hours of the day,

around 4:00 p.m. to 5:00 p.m., about 12% of daily visitation enters the unit each hour, which means that about 130 people per hour are entering the unit at these peak times.

Under this plan, most trails west of the river would be rezoned from the Natural Zone to the Natural Area Recreation Zone, while the Rottenwood Creek Trail would remain in the Developed Zone. The probability of encountering other visitors would be moderate to high in the Natural Area Recreation Zone and high in the Developed Zone. Tolerance for natural resource degradation will be low. The desired conditions for Palisades West state that visitors would have “opportunities to connect with nature and experience solitude and relative peace and quiet, despite high visitor use at times.” Also, despite its location inside the Atlanta Perimeter, the “Palisades unit would have rustic, forested feel evocative of the North Georgia Mountains.”

Management concerns in Palisades West include congested parking lots, trail width and depth from heavy visitor use, dogs off leash, and conflicts between dogs and trail users. Therefore, monitoring incidents of unauthorized parking, the trail condition, and visitor complaints for conflicts with dogs indicators will be important to achieving desired conditions in Palisades West.

LIMITING ATTRIBUTE

Impacts to natural resources and the visitor experience are the attributes that most constrain the Palisades West trail system’s ability to accommodate use. Impact to natural resources include vegetation, soils, and riverbanks. As visitation in the area increases, more vegetation trampling, soil destabilization, and impacts to the sensitive natural resources may occur. These impacts are a barrier to achieving the goal of sustainable trails and may threaten the desired condition of a low tolerance for natural resource degradation. These impacts are also closely related to crowding and congestion in the area, which at times may exceed the desired conditions that allow for the opportunities for solitude at certain times of the day or season.

VISITOR CAPACITY

Given the limiting attribute, visitor capacity is identified at current use levels of 130 people per hour. The total trail mileage in Palisades West would increase by 1.6 miles under the action alternative, so the number of people per mile would decrease under this visitor capacity. This lower number of people per mile would relieve some of the resource challenges and crowding so that the trail system better achieves desired conditions with 130 people per hour on the trails. In addition, the trail system would undergo a full-scale redevelopment and environmental restoration to create a sustainable, manageable trail system with a high diversity of quality trail experiences. This action will relieve some of the resource challenges so that the trail system better achieves desired conditions. However, the parking lot will not be changed, so the area as a whole will not be able to accommodate additional use.

MANAGEMENT STRATEGIES

- Where possible, encourage visitors to use sites that can handle high volumes of use during peak use times.
 - Increase public education efforts to encourage voluntary redistribution of use to off-peak times.
 - Use press releases/media before historically crowded weekends to prepare the public for crowds.
 - Increase maps and signage about various destinations in and outside of highly developed sites.
 - Provide information to visitors about sites that are likely to be busy so they know of those conditions before they arrive.
- Increase education and signage about parking in designated areas.
 - Increase education and information during peak times about where to find available parking.
 - Display information on park websites or social media, and direct park staff to communicate about areas that accommodate higher use when in contact with visitors.
 - Increase enforcement of parking outside of designated areas.
 - Post signs indicating parking is at capacity (return at a later, designated time).
 - Use innovative technology or methods to communicate with the public about other opportunities that are available to them in or outside of the park.
 - Designate some short-term parking spaces at key locations to ensure that a variety of people can visit the site over a day and use levels stay within the thresholds.
 - Provide real-time information regarding parking and access opportunities (e.g., text alerts and radio station updates).
 - Deploy intelligent transportation systems to provide visitors with information about parking lot status. This information would be conveyed to visitors before and/or upon entry to the frontcountry.
 - Consider a temporary queuing system until more vehicles leave the area. Actions might include turning vehicles away.

Appendix F: Sustainable Trail Guidelines

Section 1. Introduction and Purpose

Introduction

The trails management plan provides an opportunity to step back and review the current trail system and evaluate its sustainability for user enjoyment, resource protection, and park management operations. One of the primary objectives identified during public scoping was to establish a trail program that will be systematic in providing stewardship of the Chattahoochee River National Recreation Area trails for years to come.

To ensure that the trails management plan is implemented successfully, the park has created these sustainable trail guidelines. The guidelines serve as a roadmap for trail construction, maintenance, and management in the park and focus on the following topics to incorporate best planning, design, and management practices for trail sustainability:

- **Trail Design.** The guidelines outline the basic principles and practices to administer during the site assessment and design phases of trail development. Guidance includes the trail development process for trails in Chattahoochee River NRA; identifying trail classes and types and their design and management criteria; site assessment and site design best practices; and program guidance for the development of trail facilities, signage, and accessibility and mobility that is suitable to each trail's individual site conditions.
- **Trail Construction.** The guidelines establish basic principles and best practices to administer during the physical construction and maintenance of a trail.

- **Management, Maintenance, and Monitoring.** The guidelines recommend management actions that will sustain park trails for future generations. Guidance is provided on annual and long-term maintenance, trail closures, management of trails for special use permit events, and trail monitoring.

Purpose

The intention of this document is to formalize existing practices and provide guidance on trail design, management, construction, and maintenance specific to Chattahoochee River NRA. The objectives of trail guidelines are to (1) ensure a consistent look without compromising local initiative, (2) ensure a high standard of quality without overbuilding, (3) ensure a basic level of safety without removing all risk, (4) maximize accessibility without compromising the character of the trail, and (4) ensure environmental and resource protection throughout the entire process.

Sections

The trail guidelines are divided into five primary sections:

- **Section 1. Introduction and Purpose**—This section provides an overview and defines the purpose of sustainable trail guidelines at Chattahoochee River NRA.
- **Section 2. Trail Types and Reclassifications**—This section outlines a general trail classification system that will be used by Chattahoochee River NRA for design and management.
- **Section 3. Trail Planning and Design**—This section outlines the basic principles, steps, and practices to administer for the site assessment and design of a trail.

- Section 4. Trail Construction—This section outlines basic principles and practices to administer during the physical construction of a trail.
- Section 5. Management, Maintenance, and Monitoring—This section presents guidance for trail management that will sustain park trails for future generations. The guidance includes annual and long-term maintenance, trail closures, management of trails for special use permit events, and trail monitoring.

Section 2. Trail Types and Reclassifications

Trail Types

Four types of trails are identified in the Chattahoochee River NRA trails management plan. Each trail type has a distinctive use that informs design criteria and guidelines recommended for each trail type. These guidelines provide a range of design specifications based upon the user type, intended experience, and conditions in specific trail locations. An overview of the four types is provided below and is followed by specific design guidelines for each trail type. Under each trail type description, the recommended design guidance is provided for each applicable trail class. The park's four trail types are:

- Type 1—Natural surface pedestrian trail
- Type 2—Natural surface multiuse trail (pedestrian and bicyclist)
- Type 3—Universal access trail
- Type 4—Aggregate multiuse trail (pedestrian and bicyclist), which includes the Cochran Shoals Fitness Loop and potential greenway corridors.

The 2009 general management plan (GMP) specifies which facilities are allowable in each zone. These sustainable trail guidelines specify which trail types within those zones will have those facilities. Put another way, the general management plan supersedes the sustainable trail guidelines, and the sustainable trail guidelines are meant to further define the guidance in the general management plan. For example, a boardwalk may be allowable on a type 1 trail, but it may not be an allowable facility on a type 1 trail in all management zones per the general management plan.

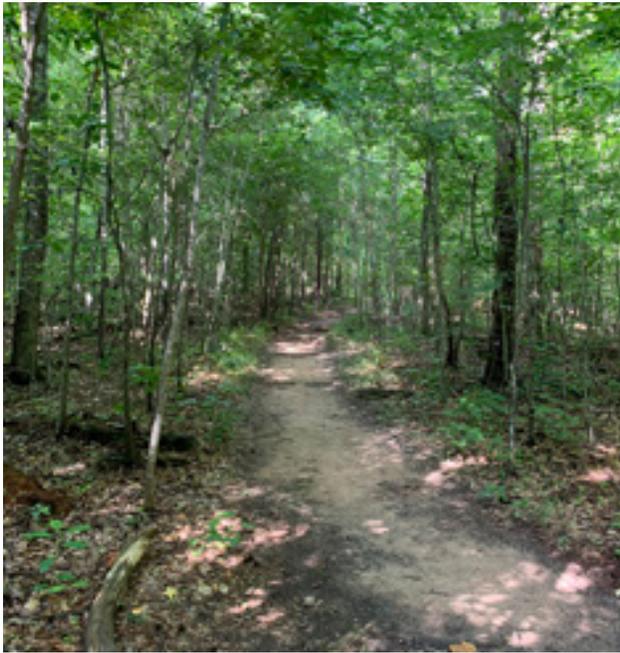


Figure F-1. Typical Section of Natural Surface Pedestrian Trail (Island Ford)

TRAIL TYPE 1—NATURAL SURFACE PEDESTRIAN TRAIL

Design Criteria: Tread narrow and rough. Few or no allowances for passing.

Materials: The trail surface will be native soils with limited grading.

Table F-1. Trail Type 1—Natural Surface Pedestrian Trail Characteristics

Trail Features	Description
Trail Width—Natural Zone, Rustic Zone, Historic Resource Zone, Rustic Zone	1–2 feet*
Trail Width—Natural Area Recreation Zone, and Developed Zone	2–4 feet*
Trail User	Pedestrian only
Tread Surface/Material	Natural native soils, surfaced as needed for hardening with natural native materials such as stone, rock, or wood
Horizontal Clearance	3–4 feet
Vertical Clearance	8 feet
Longitudinal Slope	Varies, not to exceed 30%
Cross-sectional Slope	2% typical, but not to exceed 5.5%
Special Structures*	Structures where protection of resources are needed, including boardwalks, stairs, foot bridges
Signage*	Kiosks; loops and trails marked at intersections and with difficulty. Limited interpretive signage.
Trailheads	Visible trail markings/signage
Accessibility	Substantial barriers present. Challenges to accessibility may exist.
Trail Maintenance	Routine annual maintenance. Maintenance in response to reports of unusual resource problems requiring repair/resource protection/trail safety, such as storm damage creating heaving large numbers of downed trees.

* **Trail type 1 as related to GMP zoning:** Variation based on GMP zones exists in type 1 trails. Most often these changes based on zoning can be found related to the characteristic of trail width, as seen in table 1, but structures and signage may also vary by zone. Please see the trails management plan for further information.

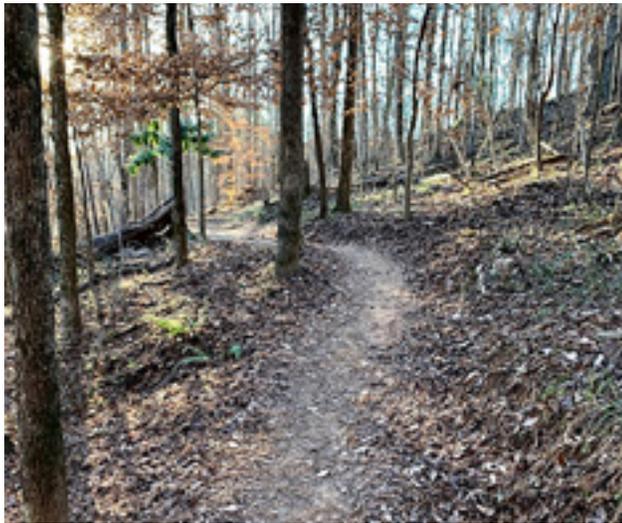


Figure F-2. Typical Section of Natural Surface Multiuse Trail (Cochran Shoals)

TRAIL TYPE 2—NATURAL SURFACE MULTIUSE TRAIL (PEDESTRIAN AND BICYCLIST)

Design Criteria: Tread narrow and rough. Width accommodates unhindered one-lane travel, with occasional allowances for passing.

Materials: The trail surface will be native soils with limited grading and will not include any nonnative material for hardening.

Table F-2. Trail Type 2 Natural Surface Multiuse Trail Characteristics

Trail Features	Description
Trail Width	4–8 feet typical and 10 feet when necessary for passing
Trail User	Pedestrian and bicyclists
Tread Surface/ Material	Natural native soils, surfaced as needed for hardening with natural native materials such as stone, rock, or wood
Horizontal Clearance	3–4 feet
Vertical Clearance	8 feet
Longitudinal Slope	Varies, not to exceed 30%
Cross-sectional Slope	2% typical, but not to exceed 5.5%
Special Structures	Trail structures may be common. Trail bridges as needed for resource protection and appropriate access Boardwalks; drainage; bridges, puncheons, and armoring
Signage	Kiosks; loops and trails marked at intersections. Limited interpretive signage.
Trailheads	Visible trail markings/signage; caution signs at trail crossings or technical sections
Accessibility	Substantial barriers present. Challenges to accessibility may exist; however, per the park compendium (2021), electric bikes and other power-driven mobility devices are allowed on all multiuse trails, which may reduce some athletic barriers.
Trail Maintenance	Routine annual maintenance. Maintain clearance for user convenience/recreational experience. Maintenance in response to reports of unusual resource problems requiring repair/resource protection/ trail safety.



Figure F-3. Typical Section of Universal Access Trail (Cochran Shoals)

TRAIL TYPE 3—UNIVERSAL ACCESS TRAIL

Design Criteria: The trail tread width and surface will adhere to Architectural Barriers Act (ABA) standards and create a trail that provides access to the widest range of user abilities. Tread will be wide and relatively smooth with few irregularities. Width accommodates unhindered one-lane travel, with frequent or regular allowances for passing and will incorporate resting intervals.

Materials: Surfaces will range from natural to imported materials and hardened surfaces based on trail user volume and resource conditions.

Table F-3. Trail Type 1 Universal Trail Characteristics

Trail Features	Description
Trail Width	3–8 feet
Trail User	Pedestrian only
Tread Surface/ Material	Crushed aggregate; boardwalk; brick/masonry/porous pavers
Horizontal Clearance	1–2 feet
Vertical Clearance	8 feet
Longitudinal Slope	Up to 5% (standard), 5% to 8.33% maximum; requires resting intervals every 200 feet, 8.33% to 10% every 30 feet, and 10% to 12% maximum every 10 feet.
Cross-sectional Slope	5% maximum
Special Structures	Structures present and substantial. Trail infrastructure meets ABA requirements. Substantial trail bridges are used at water crossings. Drainage structures are present. Curbing could be used to retain aggregate and control braiding.
Signage	Where provided, informational and directional signage along the trail will meet Harpers Ferry Center’s Programmatic Accessibility Guidelines for park signage. Loops and trails are marked with distances.
Trailheads	Trailhead signage should include length of the trail or trail segment; type of trail surface; typical and minimum trail tread width; and typical and maximum trail grade; typical and maximum trail cross-slope. Temporary conditions and hazards will also be communicated when necessary.
Accessibility	Meets or exceeds ABA standards
Trail Maintenance	Routine annual maintenance. Targeted high level of accessibility. Trail prepared for earliest opportunity to use in season. Maintenance in response to reports of unusual resource problems requiring repair/resource protection/trail safety. Maintenance of universal access trails to be prioritized over other classes. Seasonal and other temporary conditions and potential hazards will be clearly communicated to the public at the trailhead and other related public information platforms. Repairs to trail tread will maintain a firm and stable surface where applicable.

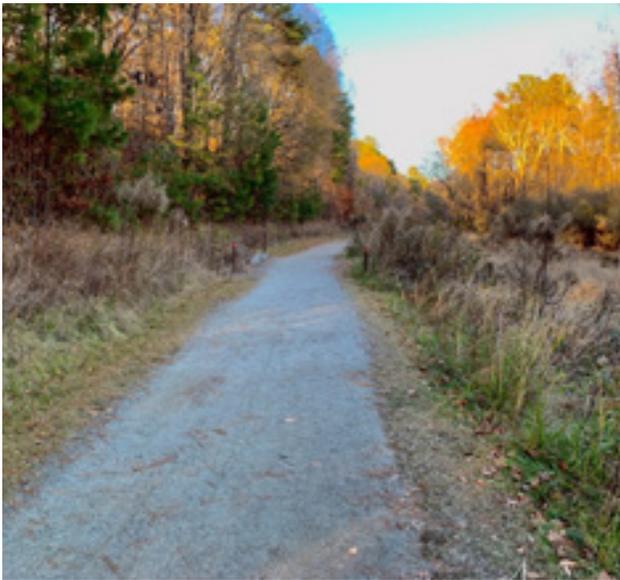


Figure F-4. Typical Section of Aggregate Multiuse Trail (Cochran Shoals)

TRAIL TYPE 4—AGGREGATE MULTIUSE TRAIL

Visitor Experience: These aggregate multiuse trails are used by hikers, joggers, and cyclists as well as by administrative and emergency vehicles. The trails have an 8- to 10-foot trail tread width. Aggregate multiuse trails serve a variety of trail users because of easy terrain and proximity to visitor services. Higher volume of use places greater importance on maintaining trail conditions and trail use education.

Materials1F: A crushed aggregate mix is recommended. Where greater stability is required (greater than 4%), pervious and non-pervious materials are recommended that align with the characteristics of the trail, trail use volume, and resource condition. Railings and boardwalks are used where necessary.

Table F-4. Trail Type 4 Aggregate Multiuse Trail Characteristics

Trail Features	Description
Trail Width	8–10 feet typical*
Trail User	Pedestrian and bicyclists
Tread Surface/Material	Crushed aggregate; boardwalk; brick/masonry/porous pavers
Horizontal Clearance	2–6 feet shoulders
Vertical Clearance	8 feet
Longitudinal Slope	3%–15%
Cross-sectional Slope	1%–5%
Special Structures	Structures present and substantial. Trail infrastructure meets ABA requirements. Substantial trail bridges are used at water crossings. Drainage structures are present. Curbing could be used to retain aggregate and control braiding.
Signage	Kiosks; signage must have ABA accessible symbols and total length of accessible trail. Loops and trails marked with distances.
Trailheads	Visible trail markings/signage
Accessibility	Meets or exceeds ABA standards
Trail Maintenance	Routine annual maintenance. Targeted high level of accessibility. Trail prepared for earliest opportunity for peak season use. Maintenance in response to reports of unusual resource problems requiring repair/resource protection/trail safety. Seasonal and other temporary conditions and potential hazards will be clearly communicated to the public at the trailhead and other related public information platforms. Repairs to trail tread will maintain a firm and stable surface where applicable.

* Areas of the fitness loop (river adjacent in Cochran Shoals) have a trail width that appropriately exceeds 10 feet.

Note: The 2022 *Comprehensive Trails Management Plan* identifies existing paved routes as type 4 trails in Vickery Creek (the Roswell Riverwalk Trail), Gold Branch (the Lower Roswell Trail), and Palisades (the Rottonwood Creek Trail). These routes are managed for the same types of trail users and visitor experiences but may be maintained as paved infrastructure. No new construction of paved trails will occur.

Definitions of Trail Reclassifications in This Plan

Beyond the identification of the four trail types for park trails, the trails management plan classifies some existing trails for “rehabilitation” or “restoration.”

Rehabilitation. This trail class entails a one-time reconstruction of an existing trail in which the new trail would follow the existing alignment. Trails were tagged with this class when the current trail had a safety concern, serious recurring water issues (i.e., drainage), or extremely poor trail condition. Types of work expected to occur in this trail class include earthwork (e.g., establishing a drainage ditch), reversing slopes (i.e., grade reversals), rock armoring, and heavy brush clearing.

Restoration. Roads, trails, recreation areas, and river crossings that are not part of the designated system would be restored to pre-disturbed conditions. Before implementation, park staff would determine the exact restoration strategy needed based on factors such as the likelihood that vegetation would naturally recover and the extent of the existing human impacts. Restoration would be contingent on funds and staff availability, may be subject to additional compliance (particularly section 106 of the National Historic Preservation Act), and may be phased over time.

Restoration of trails as proposed in the trails management plan is critical to achieving the desired conditions and visitor experiences intended of the plan. Furthermore, as described in chapter 3 of the plan, trails and their use impact wildlife through fragmentation and loss

of habitat, so new trail construction is intended to be offset by restoration of unsustainable trails in other areas of the park. Any new trail construction in a park unit must be accompanied by restoration of trails in that unit, as identified for such treatment in the trails management plan.

Active Restoration. The intention of active restoration is to reconstruct the natural spacing, abundance, and diversity of native plant species as much as possible. Active revegetation may require implementation level compliance (see section 3.2.3) and is broken down into two categories:

1. Major ecological improvements: This category of restoration is the most intensive in terms of time, money, and required equipment. Major ecological improvements would involve substantial earthwork, including using heavy machinery (i.e., grubbing, recontouring, obliterating tread), and would result in a significant improvement to the landscape.
2. Minor ecological improvements: This category of restoration is less technically complex, involves minimal tools, and could be completed by volunteers. Minor ecological improvement techniques would involve replanting (using native species seed), fencing, or similar methods.

Passive Restoration. Passive restoration allows surrounding vegetation to colonize the abandoned trail. This method is appropriate in areas that are likely to fill in if left alone. The process works when erosion has been stopped and the trail has been scarified allowing adjacent vegetation to spread and grow rapidly. This modest level of restoration would involve placing barriers on trails, scarifying the trail tread, and allowing the plants to revegetate on their own.

Section 3. Trail Design

The general planning and site design process applies to new trail construction as well as reroutes for the rehabilitation and restoration of existing trails. Please refer to appendix B of the trails management plan for the route corridors.

Trail Design Process

This phase of development begins with the selection of a trail construction corridor identified in the 2022 trails management plan and approved by the superintendent. Upon this selection, the following planning steps are recommended for all trail projects in the park:

Step 1. Establish a Trail Design Team. A project manager from the park will be assigned at the initiation of a trail project. The project manager will complete any necessary compliance for project implementation using a designated trail design team, otherwise known as an interdisciplinary team. The team will serve as advisors and reviewers during the trail planning, design, and construction process. The team can consist of the park facility manager, park biologist, hydrologist, environmental protection specialist, accessibility coordinator, outdoor recreation planner, and communications/public affairs specialist, as deemed necessary to the trail location and conditions. Based on the conditions of the proposed trail, additional trail design team members, including user group representatives and nonprofit partners, may be involved.

- **1.1 Determine Intent of Trail.** The trail design team will review the trails management plan, including the trail type from section 1 of this appendix, to determine the design parameters and establish the trail intent. Corridors for new trails will follow alignments identified in the trails management plan.

Step 2. General Site Assessment for Trail Alignment. A site visit will be conducted at the potential trail corridor to identify challenges and opportunities for the general alignment. The assessment will identify an implementation alignment within the corridor proposed by the

trails management plan. The trail design team will identify sensitive areas and pertinent issues. Compliance requirements will be identified by the trail design team.

- **2.1 Site and Trail Plan.** The project manager will develop an initial site and trail plan based on general site assessment and field conditions, surveys, consultation with the trail design team, and discussions with resource management and maintenance staff.
- **2.2 Flagging the Trail Alignment Corridor.** The project manager will flag the proposed trail layout in the field. The project manager will coordinate with the interdisciplinary team and management team at the park before flagging materials being placed to ensure public awareness of the activity.
- **2.3 Conduct Implementation Level Compliance for Trail Construction (as necessary).** The trails management plan and its associated programmatic agreement for the treatment of cultural resources requires that before any new construction or active restoration of trails, an archeological survey will be carried out in previously unsurveyed corridors and that any archeological sites encountered will be evaluated for eligibility for the National Register of Historic Places. Impacts to eligible properties will be avoided through modification of the trail alignments or minimized in consultation with the state historic preservation officer and tribes.
- **Natural resource surveys and wetlands delineations are also expected** in advance of ground-disturbing activities. The park's database of sensitive species should be consulted before trail construction or active restoration and, as necessary, in consultation with the park's resource managers, the park's biological survey to identify species of concern and wetlands statements of finding may be required before finalizing a plan for trail work.

Step 3. Finalize Construction Plan. The project manager will refine the site plan based upon the results of resource surveys and with input from

the trail design team, which will result in a final layout, cost estimates, construction techniques, staging locations, and equipment guidance.

- **3.1 Pre-Approved Maintenance Plan.**

Before construction, the park superintendent needs to provide an approved maintenance plan for the trail that outlines how the new asset will be maintained through park staff or volunteer labor.

Step 4. Construct Trail. See “Section 4. Trail Construction” below and the “Mitigations Measures Applied to Alternative 2 (NPS Preferred)” section in chapter 2 of the trails management plan.

Step 5. Formalize Management, Maintenance, and Monitoring Plan. See “Section 5: Management, Maintenance and Monitoring.”

General Guidance for Trail Design

This section provides general guidance for trail design as well as the supporting amenities. The guidance set forth aligns with the procedures described above for the Chattahoochee River NRA trail planning process.

Physical design. Establishing baseline design principles for every trail, whether it be rehabilitation and restoration of existing trails or the development of a new trail, will be essential for the long-term sustainability of the trail system, minimizing its impact to park resources, and providing a safe and enjoyable experience for the park visitor. These general design principles have been compiled from other recent NPS trail plans and guided from past work and publications on sustainable trail development throughout the United States. These principles should be considered part of the design development and construction practices for every trail in the park and reviewed during step 2 of the Chattahoochee River NRA trail planning process. It is also appropriate to consult any updated trail guidance from NPS policy once a trail corridor has been established and approved.

Accessibility and mobility guidance. The National Park Service strives to ensure that all people have the highest level of accessibility that is reasonable to NPS programs, facilities, and services in conformance with applicable regulations and standards as outlined in Director’s Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services*. The National Park Service intends to provide accessibility within all trail and facilities within the park. Each trail and its associated amenities and facilities will be evaluated on its conditions, its level of accessibility determined, and applicable design methods integrated into the trail design.

Trail location. The most sustainable trails are located along the sides of hills and follow the elevation contours providing undulation for drainage. Following this design assists with water drainage from the trail and keeps users on the trail, preventing widening.

Trail alignment. Sustainable trails traverse slopes rather than directly descending a hillside. A trail traversing a slope allows for sheet runoff of water, which causes less erosion and minimizes the creation of gullies. Because of poor soils at Chattahoochee River NRA, creating trails that follow the fall line or move perpendicular to contours is unsustainable. Such fall-line trails degrade over time, creating erosion of soils and requiring consistent maintenance.

The following design principles are a set of sustainable principles that should be used when engaging in the trail planning process as it relates to step 2:

- **The half rule.** The grade of a trail should not exceed half of the grade of the sidehill on which it is located. Exceptions to the half rule occur when soils in the location of the trail are prone to erosion, in which case the maximum sustainable trail grade may be considerably less than half of the grade of the sidehill. Except in rare and limited situations, the maximum grade of a trail should not exceed 15%.

- **Sustainable grade.** The overall average grade of the trail should be generally 10% or less. An average grade of 10% or less can decrease the impacts of erosion.
- **ABA-compliant grade.** To meet ABA requirements, maximum lengths for segments are identified for slope ranges that exceed 5%. These ranges include 5%–8.33%, maximum length 200 feet; 8.33%–10%, maximum length 30 feet; and 10%–12%, maximum length 10 feet. Trail segments not exceeding 5% running slope can be any length. Trail segments begin and end with resting intervals (ABA Accessibility Standards, section 1017).
- **Grade reversals.** A grade reversal is a brief change in elevation where the trail drops subtly before rising again. Incorporating the use of grade reversals in trail design will assist in water drainage and minimize the potential for erosion. Prior guidance for trail construction included the use of both rock and log waterbars; however, using grade reversals rather than these built features will result in less cyclic maintenance over time.
- **Outslope.** Trails should be built with a slight tilt (about 5%) of the trail tread toward the low side of the trail. Where outslope is difficult to implement, the use of grade reversals should be implemented before and after that section to reduce the amount of water accumulation.

Design with natural and cultural resources. Park trails would be designed to avoid sensitive natural and cultural resources. When avoidance of a resource is not feasible, designing the trail to minimize its impact will be required. Best practices and sustainable design methods that minimize impacts to cultural resources and complement natural features will be used. The following guidance pertains to trail design within park resources:

- **Alignment outside of buffer zones.** Ensure trail alignment design is outside of buffer zones identified during site assessment for

sensitive natural resources and cultural resources, and/or implement management and design measures for those areas where the trail must cross through established buffer zones. The US Environmental Protection Agency recommends a protected buffer of 50 feet around wetlands and streams where siting of campsites, parking areas, or other structures should be avoided. In addition to wetlands and streams, natural resources, including certain plant and animal species/communities, granite outcrops, wetlands, seeps, and springs, should all be buffered when possible. The park's database of sensitive species should be consulted before trail alignment, construction, and maintenance to locate and avoid sensitive areas and sensitive species. In addition, surveys should be conducted to inventory and identify these resources of concern before any new trail construction so that they may be avoided. Trails would seek to achieve a minimum buffer of 50 feet around sensitive resources, but buffers may be increased based upon the sensitivity of the resource.

- **Archeological and historical site protection.** Archeological inventories covering the project area must be complete before starting any new trail construction or restoration project. Historic properties will be avoided where possible through minor reroutes of trails. If avoidance is not possible, measures will be taken to limit or mitigate impacts to cultural sites. Reference the programmatic agreement under development for the trails management plan for guidance on the completion of compliance associated with cultural resources when implementing the trails management plan.
- **Drainage.** Design methods to manage stormwater and trail runoff naturally through dissipation and infiltration should be identified and developed as part of the overall design of the trail in order to reduce runoff velocity, erosive conditions, and stream head

cutting. Additional infrastructure required to meet drainage requirements should also be identified on the site plan.

- **Stream crossings.** When a stream crossing is the only viable option, it should be designed and constructed at no greater than a 8% grade. Crossings should be located on gradually sloping stream banks to minimize impact (IMBA 2004). Trails should not parallel a stream for an extended distance. If the trail should need to travel along a waterway, it should be aligned in a manner that it moves toward and away from the waterway at intervals that are determined appropriate for the size of the river or stream and the existing riparian habitat conditions. Boardwalk crossings for streams should span the channel of the stream and any boardwalk posts or fill should be kept above the ordinary high-water mark of stream channels.
- **Wetland boardwalks.** If a trail is constructed within a wetland, a boardwalk system is recommended. The boardwalk design should provide a layout that minimizes the width of the boardwalk tread and the number and size of pilings (helical piers) needed for excavation and uses best practices that minimize the area of excavation. Additionally, trail or boardwalks in or near wetlands should be constructed during winter, if feasible, and the width of temporary access roads for construction should be minimized to reduce impacts to aquatic resources. Any impacts or changes to identified wetlands require a Clean Water Act 404 permit through the US Army Corps of Engineers and permits by the Georgia Environmental Protection Division.

Soil suitability. Sustainable trails consider the soil conditions and user patterns to identify design measures required for long-term sustainability. Since the soils at Chattahoochee River NRA are identified as poor, the following measures should be addressed in the trail planning process:

- **Minimize user-caused soil displacement.** Design trails that avoid abrupt corners and sharp hills, when feasible. Design trails that incorporate consistent flow, insloped turns, and the use of trail hardening practices in areas that are susceptible to soil displacement.
- **Determine infrastructure.** Once a general trail alignment is determined in step 2, further layout of infrastructure will be identified. Determination of the type of infrastructure, costs, and general design will need to be assembled during the site design phase. When necessary, ensure to budget for trail hardening measures before construction to avoid soil erosion problems.
- **Create clear sightlines for multiuse trails.** Avoiding abrupt stops and use of braking will create less erosion issues for bicyclists and preserve trail tread.

Trail Facilities

The park's trail system contains support facilities to provide access and amenities for visitors. The design and types of facilities are an important aspect of the management and use of park trails. The park's general management plan includes descriptions of appropriate facilities by zone, and the trail-related facilities will conform to allowable infrastructure by GMP zone.

Sustainable design and climate friendly practices. All new improvements to existing trail facilities should be designed and developed recognizing the character of the park and aim to meet NPS Climate Friendly and Sustainable Design Guidelines. Using low-impact design standards, such as Leadership in Energy and Environmental Design, sustainable sites, and building guidelines, and including the use of

recycled materials, the Environmental Protection Agency's WaterSense program, the park's environmental management program, and other similar programs, should be considered where applicable.

Trail Amenities

The Chattahoochee River NRA trails management plan describes three types of access points: trailheads, primary access, and secondary access. Public access to the park's trail system and connection to local communities would be facilitated by this system of access points. Modifications to parking and supporting trail infrastructure would be handled on a case-by-case basis. Please reference chapter 2 in the trails management plan under the action alternative for further descriptions.

Trailheads. Trailheads are places that serve as a starting or ending points along a trail that provide information and, potentially, facilities at varying levels of services to the trail user and park visitor. Trailheads are developed areas on federally owned and NPS-managed lands that include a parking lot, trail access signage, and trail access. Trailheads may also include other facilities as outlined in the trails management plan and can vary based on the designated zoning. Refer to the maps in appendix B for locations of trailheads.

- **Restrooms.** New and/or improved restroom facilities should be designed using NPS Sustainable Design Guidelines (NPS 2009) and NPS Climate Friendly Program Guidance (NPS 2011). Types, quantity, and locations for restrooms will be based upon zoning, trail access classification, and maintenance requirements.
- **Bike racks.** Bike racks may be installed at designated trailheads where bicycle use is authorized. Design and placement of the bike racks should reflect and maintain the character of the park and its resources. Materials for bike racks should provide minimal additional maintenance when installed.

- **Benches.** Benches will be located along trails and at trailheads, where applicable. Benches should fit the character of trail type and will adhere to the bench standards currently in place at the park.
- **Picnic tables.** Picnic tables will be limited to designated picnic areas of the park and generally not located on trails.

Primary trail access points. Primary trail access points are areas on federally owned and NPS-managed lands that have minimal facilities in comparison to trailheads. They typically exist in locations where NPS trails intersect with external trails systems or municipal pedestrian pathways. Primary trail access points include trail access signage and trail access. Refer to the maps in appendix B for locations of primary trail access points.

Secondary trail access points. Secondary trail access points are on NPS boundaries with lands not owned or managed by the National Park Service and which may include trail access signage and authorized trail access. These secondary trail access points are typically owned and managed by park neighbors, such as homeowners' associations or apartment complexes. The locations of authorized secondary trail points would be determined in partnership with park neighbors upon implementation of the trails management plan and are therefore not included in the maps in the plan.

Trail Signage and Markers

Trail and trailhead naming. Trailheads and trail access points throughout the park would be formally named and designated, as will some popular trail routes. These names would be used on signage, maps, and other informational materials to improve wayfinding, trip planning, and sense of place.

Signage. Trails and destinations would be clearly marked with signs. Signage located at trailheads and both primary and secondary trail access points would be standardized. Trail

markers would be installed at trail junctions and destinations, and mile markers could be considered for use along the greenway or Fitness Loop. Please see the trails management plan for additional information and locations.

Trail information. A variety of trail information should be available to trail users through trailhead signage, on-trail information, trail maps, and the use of digital media at trailheads and through mobile applications (e.g., NPS mobile app). Trail characteristics and condition information are required at all trailheads, including:

1. length of the trail or trail segment
2. type of trail surface
3. typical and minimum trail tread width
4. typical and maximum trail grade
5. typical and maximum trail cross-slope
6. types of users permitted on trail
7. hazards such as rocks and roots on trail
8. temporary hazards and seasonal conditions such as flooding, surface maintenance needs, or intruding vegetation

Section 4. Trail Construction

This section outlines general guidance for construction, including the rehabilitation and restoration of existing trails and the development of new trails. Collaboration during the trail design process with maintenance and resource management disciplines at the park are the cornerstones for successful construction of the trail, long-term sustainability, and minimal maintenance.

Using the best management practices to construct a new trail or improving an existing trail is critical to its future maintenance and management. The following general guidelines are recommended for basic activities and methods to use during trail construction. The park's trail guidelines and practices should stay updated to trail industry standards, nationally and regionally, that are beneficial to the trail user and park

resources. Information in this section is adapted from the trail guidance manuals cited in the reference section of this document but primarily from the National Park Service, US Forest Service, Minnesota and Michigan Department of Natural Resources Trail Guidelines, and the International Mountain Biking Association's Trail Solutions manual.

Guidance on Trail Construction Practices

Trail clearing. Clearing vegetation for any new trail will be coordinated with park staff consisting of disciplines in or equivalent to planning and design, plant ecology, biology, and trail construction and maintenance during Step 2.2 Flagging the Trail Alignment Corridor. For protection against erosion and to maintain resource integrity, native vegetation should be retained when possible.

The amount of trail clearing needed will be based upon the category of trail type and the GMP zone within which it is identified. Trail clearing should be made as narrow as possible.

Healthy trees of any size should not be removed except where they interfere with trail traffic and/or the trail cannot be relocated to eliminate the interference. Healthy trees over 12 inches diameter breast height should remain, and the trail should be routed to avoid being placed within the area directly under the outer circumference of the tree branches (i.e., the dripline). When branches extend over the trail, the corridor would follow the vertical trail clearance standards.

Base construction. Construction of sidehill trails usually requires grading the bed for the trail, but if the existing surface is flat and provides a suitable tread, leave it undisturbed. This practice will reduce erosion and maintenance. On level ground, form the trail base by building up rather than cutting down. Remove all duff before making cuts or fills for the tread. Start grading on the upper slope and carry it down to the finished grade. The usual procedure is to "scratch" a continuous line along the upper slope using a Pulaski or McLeod. Remove any excess

duff at this time. Begin excavation along this line using the appropriate equipment for the trail. The depth, width, and material of surfacing are determined by the quality of the native material and the class of the trail, as specified in these guidelines. As a standard of practice, do not add material or fill to the trail on these contour trails; rather, create a full bench.

Drainage. Proper drainage is a key component to the sustainability of any trail. Drainage control on a trail relates to two primary types of water control: surface and subsurface water.

- **Surface drainage.** Methods to manage surface drainage include outslope, grade reversals, drain dips, varying the trail grade, and armored crossings.
- **Outslope.** Establishing an outslope to a trail will allow water to sheet across and off the trail instead of funneling down its center. Outslope design should exceed running slope to be effective. If loose soil is present, the incorporation of grade reversals is recommended.
- **Grade reversals/drain dips.** A drain dip provides subtle grade changes to a trail, allowing water to exit the trail at intervals. This process reduces the volume and erosive power of water runoff along a trail corridor. Drain dips should be located where they will be most effective. Features such as natural contours, side slope, and trail grade must be studied closely to determine where the largest volume of water can be intercepted. Soil conditions, vegetative cover, and downslope steepness must also be considered when selecting a drain point and outflow location. Ideally, drain dips should be located where natural swales or drainage ways bisect the trail. A drain dip begins on the up-trail side of a normal outslope. The outslope is gradually increased (4%–10%) as the trail grade is cut and lowered to the trough and drain point. The terrain and volume of water encountered usually determines the length and the degree of outslope used on a trail. Generally, steep terrain and higher flows require longer drain dips with more outslope.

The trough is dug across and down the trail at a 30-degree angle and should also be dug with a 15% downslope to ensure adequate drainage and sediment transport. From the trough, the down-trail side sharply rises to the original grade and outslope. This angle must not be too steep or this portion of the trail will be worn down or scuffed into the trough by trail users. Below the drain point, a ditch or drainage channel must be provided to allow water to escape from the trail and fill slope without creating undue erosion. This channel is sized according to the volume of water generated by the drain dip. This channel may also require armoring with native rock to reduce scouring and bank erosion. When a trail cannot support enough drainage dips to meet its drainage needs, knicks and rolling grade dips can be a practice to evaluate as an option. These options feature an outsloped depression in the tread, followed by a long, gentle dirt ramp. The ramps are typically long, at 10–20 feet from tip to tail and outsloped at 5%. The total length of a rolling grade dip varies widely depending on the steepness of the trail tread, but it is typically 15–30 feet.

- **Armoring the tread.** When natural drainage and/or use types create conditions that prevent the maintenance of a natural tread and no other locations are available, the use of hardening material is recommended. Hardening the tread will minimize maintenance, stabilize the surface, and minimize erosion and drainage impacts to adjacent natural resources. Armoring techniques to consider include stepping stones and rocks.
- **Mixed aggregate.** Mixed aggregate is typically used on trails located on flat terrain with poor drainage and where the use of dips and reversals are not feasible. Aggregate mix material comprising 3/4-inch crushed gravel with the crusher fines is recommended for this application and used to build up the trail tread. This mix keeps a dry surface for visitors to traverse, reducing off-trail travel.

- **Turnpike.** Turnpike construction is used in areas where the trail tread remains wet and no relocation options are available. Turnpiking builds up the trail tread higher than the water. Turnpikes are used in short intervals (not in wetlands) where trails cross over seasonal drainages or low-lying areas.
- **Edge protection.** Where a trail travels along a side slope, drainage and erosion issues can arise due to trail user patterns. Edge protection techniques should be evaluated and considered in some locations to assist with stabilizing the trail and reducing maintenance. Techniques to consider include curbing; establishing a vegetative shoulder; installing a constructed barrier, such as low wall or fencing; or visitor education and enforcement. Site conditions, trail use, trail type, and desired trail experience should be factors in determining the best technique.
- **Tread watersheds.** A tread watershed consists of the tread surface plus any uphill area where runoff flows onto the trail and down to a dip between two crests of a grade reversal. This design approach limits erosion on the trail by reducing the amount of water on the given trail segment. Designing the trail with a rolling grade with crests and dips will assist in creating tread watersheds.
- **Climbing turns.** Climbing turns should be used on grades that do not exceed 7%. Turn radii should be wide, generally 20 feet or more. Incorporating a grade reversal just above the turn is recommended. Armoring the fall line section of the turn and adding a choke point to slow users before the turn will reduce user-caused erosion. If possible, use a natural feature as a visual guiding point for trail users to anticipate the climbing turn and to appropriately determine their speed if cycling or running, which will help reduce erosion.
- **Switchbacks.** Switchbacks are sharp, directional changes on a trail to gain elevation in limited space. Switchbacks should be avoided if possible. When switchbacks are necessary, construct the turns as flat as possible. On sideslopes of less than 30%, treat the switchback as a climbing turn. If this results in the center line grade being steeper than is desirable, shorten the radius and design a step section. Provide 15–30 feet of barrier back from the turning point to prevent trail users from crosscutting inside the switchback. A gutter-type ditch, 8 inches deep and 12 inches wide across the top, should be constructed along the bottom of the cut bank to extend from the spill point up grade for 20 feet. The trail tread paralleling the ditch should have a 10% inslope that will drain water from the tread into the ditch. The tread surface, down grade from the crown line for 20 feet, should be constructed with a 10% outslope that will drain water off the trail. A traffic control barrier should be constructed by placing large rocks along the outer edge of the up-grade trail section, forming a continuous barricade. The barrier should be a minimum of 14 inches high and extend from the crown line on the turn section up grade for a minimum distance of 15 feet. Consideration of handrails should be made where applicable and necessary where steep grades or drop-offs exist.

Trail climbs. To maintain sustainable grades but meet the topographic terrain that exists within the park, trails require direction changes or placement at sustainable grades to help gain the elevation at a consistent and sustainable rate. Tread climb relates to the steepness and length of a trail overall and between individual tread crests and dips. In general, tread climbs should not exceed one-fourth to one-third of the fall line or the direct drainage paths of the natural terrain. Fall line climbs should be avoided when possible. If the trail needs to meet the fall line climb, ensuring proper grade reversals on the upslope side of the trail is imperative to reduce erosion and water runoff.

- **Turning approaches.** The upper and lower 20 feet approach sections extending away from the turning point, and the turn section should be constructed to have no less than the trail tread width. The tread on the approach sections and on the turn section should not exceed the prevailing grade of the trail and have no surface rocks over 2 inches in diameter or solid rock protrusions above the trail bed.

Drainage crossings. Crossings of streams can have significant impacts to resources if not implemented properly. At all times, avoiding drainage and stream crossings is the preferred option. If crossings are unavoidable, the following drainage crossing options will need to be evaluated and considered to determine the best option for a specified trail area. Determination of the best methods for drainage crossings should be evaluated in compliance with Director’s Order 77: *NPS Benefits Sharing*. Drainage crossing design should consider characteristics of the trail, level of use, and level of development of the trail.

- **Direct crossing.** If drainage flows are intermittent, evaluation of the installation of a primitive crossing should be considered. The use of the trail, type of trail, and resource conditions will influence this consideration. If a direct crossing begins to alter the drainage flow, then other crossing options will need to be installed.
- **Hardened tread crossing.** Hardened tread crossings should only be used where water depths during high flow are less than 3 feet, water velocities are low, trail use is low and water quality conditions will not significantly change. Hardening techniques include use of stones, gravel, and cobble to fortify the trail tread. These materials should be used at sizes appropriate for the stream conditions and trail type.

- **Culverts.** Elevated crossing are preferred over culverts as culverts can alter the water quality and stream functions significantly depending on the drainage size. Culverts should only be used when other natural water management methods are not feasible for site conditions.
- **Bridges/boardwalks.** Bridges and boardwalks are the preferred method for drainage crossings when avoidance of waterway crossings is not possible. The scale, width and materials for structures should be compatible with trail use, trail experience, GMP zone, and minimization of resource impacts. Staff will ensure consistency in bridge design across park units based on the trail type and GMP zone with a goal of establishing a distinct NPS visual identity. Bridge spans should aim not to install piers or footers into waterway. Spans greater than 24 feet should examine materials other than wood to establish long-term sustainability. A minimum bridge width should match the width of the trail. Railings, materials, and styles should be considered for the level of use, ABA requirements, proximity, and characteristics of trail. Materials should be selected based upon structural integrity and site appropriateness. Cultural landscapes and historic characteristics of the area should also be considered during design.

Other structures. Trails may require additional structures to protect the resource and provide a safe trail corridor for its users. These structures include but are not limited to retaining walls and steps.

- **Retaining walls.** Retaining walls are structures of wood or stone designed to stabilize the trail base on a side slope. Native logs should be used only if rock is not readily available, and the native logs should be peeled before placement to ensure a longer life expectancy and reduce replacement. A solid foundation on earth or rock is required to obtain a rigid, safe retaining structure and the removal of water behind the wall is necessary for its design.

- **Steps.** Steps should be discouraged to minimize infrastructure, maintenance and accessibility restrictions. Steps are recommended only as a safety feature where the physical conditions prohibit the alignment of a trail with the natural topography.

Trail restoration. Once a trail has been designated closed or a section relocated, the closed or old trail will be restored to a natural condition consistent with the location’s surrounding resources (see section 2 for more information on passive and active restoration).

Recommended steps to take in reverting the trail to a natural condition and avoiding the continuing use of the trail include: 1) Tilling or scarifying the retired tread so that new plants can seed themselves. 2) Planting or transplanting from old route native species to avoid invasive plant issues. 3) Disguising and blocking the corridor with natural material to eliminate the visual corridor and the risk of continual use on the closed section of trail. 4) Installing “Restoration in Progress” signage to inform trail users to stay off of the restored area.

Construction practices to reduce diesel emission impacts. Best practices, where applicable, to reduce diesel emission impacts during trail construction or restoration should be followed as recommended by US EPA for areas in non-attainment of National Ambient Air Quality Standards.

Section 5. Management, Maintenance, and Monitoring

A critical step often forgotten in the trail development process is a strategy for the management, maintenance, and monitoring of a trail after its construction. This section provides recommendations for three management actions: 1) trail management, 2) basic trail maintenance practices, and 3) methods for trail assessment and monitoring.

Trail Management

General Trail Operating Levels. The Park will use three trail operation levels. Condition benchmarks under specific resource conditions for each operating level are described in the sections below.

- **Trail open/fully operating.** The trail is operating as currently permitted with no restrictions for use or trail modifications required.
- **Trail seasonal/temporary closure.** The trail is temporarily closed on a seasonal basis or other temporary purpose for a resource condition. A notice will be provided on the duration and reason for the closure.
- **Full permanent closure.** Trail conditions cannot be sustained to meet the goals and principles set forth in the trails management plan. Upon exceeding monitoring triggers or thresholds from the trails management plan (see appendix D and chapter 2), the Superintendent, will determine trail closures. Upon the Superintendent’s decision, park staff will proceed with the trail closure and site restoration.

Trail Operating Benchmarks for Resource Protection. The Park has established benchmarks on specific park resource conditions to assist in determining the operational level of a trail.

- **Trail Open/Full Operating.** The trail is in good condition and is open for use. No major obstacles or repairs are underway. The trail tread is 75% dry and with no significant mud.
- **Trail Seasonal/Temporary Closures.** Seasonal closures are prescribed to designated trails to protect park resources and to meet the goals of a sustainable trails system in the Park. Seasonal closures will reduce impacts to park resources, minimize risk of tread widening, reduce annual maintenance costs to high-risk areas and provide an improved visitor experience during the drier seasons of the year. Natural resource related seasonal closures will

address three primary conditions: wet/muddy conditions, flood events, and annual nesting activities. The Park may identify additional resource issues that require seasonal trail closures. Seasonal closures will occur when the following resource issues are observed:

- » **Wet/Muddy Conditions.** Trails that are susceptible to wet, muddy conditions due to seasonally wet conditions and have high load or high use conditions will be subject to seasonal closures. The park can close additional trails as wet conditions arise. The park can also open the seasonal closed trails if the annual wet season is dry.
- » On type 2 (natural surface multiuse) trails, bicycle use is not allowed within 24 hours of a rain event. Park staff will work with partners to maintain a text-for-status program for local bicyclists to check on the operating status of type 2 trails before visiting.
- » **Flood conditions.** A flood event that covers a trail or trail facility at a level as determined in the Park's Flood Incident Plan, whereby access is prohibited.
- » **Annual Nesting.** Seasonal closures will occur in designated areas of the park where annual nesting activities occur. These areas will be identified on an annual/seasonal basis with the park biologist and the conditions of trail restrictions for the seasonal closure.
- Trail Rehabilitation, Re-Routes, and Permanent Closures. Through the trails management plan, the planning team has made every effort to reconfigure the park's trail system along sustainable routes by following contours, creating positive drainage, and other best practices. However, over time, conditions may change that affect the overall sustainability of certain sections of trail. For example, some trails may become unsustainable due to shifts in the area's hydrology, changing climate, or other

factors. Furthermore, resource conditions may change such as colonization of the area by sensitive, threatened, or endangered species. As these conditions change, park management may need to rehabilitate or re-route sections of trail, and in some cases permanently close them altogether. Restoration methods outlined in Section 4 would be followed where closures occur.

The Trail Conditions indicators (see appendix D) would be actively monitored. If thresholds are exceeded on a particular trail, it may be re-routed or permanently closed if other Management Strategies are not effective at bringing the indicator back to consistency with the threshold.

If a trail is impacting a sensitive plant or animal species, a buffer distance around that species would be determined based upon the individual species' sensitivity. If the species' presence is long-term in nature, the trail may be re-routed or permanently closed. Sensitive species are defined as those critical to the park's resource integrity, as well as threatened and endangered species, that are adversely impacted by human presence along the trail.

Event Special Use Permits. When special use events are requested for trail use, the event applicant will be required to submit with its permit request, an event sustainable trail plan. The plan (conditions of the permit) will require the permittee to outline how the trail will be protected and maintained before, during and after the completion of the event. The plan will adhere to the principles set forth in the Leave No Trace stewardship program and that exceptional damage due to use and day of event conditions is addressed in partnership with the Park. Park staff will review the plan as part of the permit approval process.

Trail Maintenance

Maintenance. Sustainable trails aim to require less maintenance and fewer resources to maintain their intended use. However, cyclic maintenance is still necessary to preserve the

life of the trail tread and reduce costly major maintenance projects. Maintenance of trails should work to keep the original design of trail and use sustainable techniques to respond to problem areas. (New River Gorge EA/Managing Mountain Biking: IMBA's Guide to Providing Great Riding [Webber 2007]).

General Maintenance. A level of general maintenance for each trail type and their respective trail class has been identified in Section 2 of these guidelines. General maintenance activities assist in providing a safe and consistent trail surface for visitors and minimizing long-term resource impacts. Specific maintenance activities should be developed that align with the designated trail type. General primary maintenance activities that will be conducted for all trails within the park will include:

- Tread Maintenance
- Mowing
- Pruning
- Pathway Clearing

Conditions and practices for each of these maintenance activities will be set by the Maintenance Division in consultation with the facility manager. They will also be reviewed by other staff in the Resource Management Division to minimize impacts on specific park resources where minimum maintenance can occur while providing a safe, sustainable trail. Levels and types of maintenance will also need to be determined in relation to NPS management systems for recurring and cyclic maintenance, preventive maintenance, component renewal, deferred maintenance, and operations.

An annual schedule is recommended for maintenance activities that would occur during a one-year seasonal cycle. The annual maintenance schedule will assist the park in prioritizing areas of concern based upon use levels, lifecycle of a trail, resource conditions, and park priorities, and will identify priority tasks for the trail volunteer program.

Maintain Existing Trails. Beyond general maintenance of the trail, trails will need to be maintained to sustain their structural integrity and changes related to visitor use and park resource conditions. Tread conditions that include the degree of muddiness, drainage control, erosion and vegetation cover are structural condition factors that exist within the park. In addition, structural integrity of trail features, such as bridges, drainage components, railings, and other trail facility structures will need to be assessed and maintained over time. Maintenance of these structural elements of the Park's trails will be conducted annually for drainage structures and reviewed every 2-5 years on other trail structural components and their conditions. Maintenance schedules will be predicated on the capacity of park operations, including park staffing and trail volunteers available to conduct the work.

- **Brushing.** On type 3 and 4 trails, the shoulders / corridor should be mowed at least twice per growing season, but on high-use trails, more often as needed. An adjustable boom mower is very efficient at brushing the corridor and adjacent ditches (type 3 and 4 only). On all trail types, the corridor should be trimmed of branches following the criteria for each trail type set forth in section 2 of these guidelines. Tree trimming should be done so that branches are cut flush with the main branch or trunk of the tree.
- **Tread Surface Maintenance**
 - » **Aggregate Tread Maintenance - The trail may need to be graded in spring or fall and should be done when the surface is wet.** This can be helpful in directing the flow of water to avoid erosion and repair normal wear of the surface. After grading, the trail should be recompact to reduce the migration of material. If the surface becomes loose and aggregate material is starting to migrate due to use or erosion it will be necessary to re-shape and compact

the trail to maintain its integrity. Staff should take care to avoid “trail creep” that results from aggregate being fanned out during any regrading. It may be necessary to add material to fill holes and shape properly. Applying water to the trail before compacting will enhance the rate of compaction and help protect against intrusion of water in the future.

- » **Natural Surface Maintenance - It is important to maintain at least a 2% cross-slope to keep water from resting on the trail.** Re-grading and shaping this slope may be occasionally necessary along portions of the trail.
- **Trail Structure Maintenance.** Repair broken planks, protruding screws or nails, railings, surface, and check for structural damage. Bridges should be checked during regular maintenance and repaired promptly if issues arise.
- **Trail Drainage Maintenance.** Culverts. Clean debris from culverts and swales on both ends of the culvert at least once per year or as needed.
- **Trail Signage Maintenance.** Repair broken planks, protruding screws or nails, railings, surface, and check for structural damage. Replace as necessary.
- **Maintenance for Accessibility.** Addressing routine maintenance on tread surfacing and vegetation trimming ensures that trails do not create additional hazards and obstacles for accessibility.

Trail Monitoring

Monitoring trail conditions and their response to changes in natural conditions, visitor use, or operational issues is an important management tool to maintain the Park’s trail system.

Monitoring methods have been identified in Appendix D: Indicators and Thresholds and two indicator topics are especially applicable to the physical aspects of trails - trail conditions and social trailing.

Trail Conditions. Continued assessment of trail conditions is a critical activity to meet sustainability goals of trails set by the general guiding principles of these guidelines and the goals and objectives of the trails management plan.

- **Indicator.** Change in Trail Width.
- **Threshold.** Trail width increases by no more than 25% from baseline conditions and does not exceed maximum trail width defined for its trail type as outlined in section 2 of this appendix.
- **Indicator.** Presence of Cross-Slope on Trails.
- **Threshold.** At least 95% of surveyed trails have cross-slope and positive drainage.

Social Trails. Informal trails (aka social trails) are visitor-created trails; often shortcuts; not promoted; duplicative; destructive to resources; and can be unsafe in certain locations.

- **Indicator.** Number of social trails.
- **Threshold.** No more than two social trails intersecting any half-mile stretch of designated trail.

Please refer to Appendix D: “Indicators and Thresholds” in the trails management plan for additional clarification, rationale, and monitoring and management strategies related to trail monitoring.

**Appendix G: Comprehensive Trails
Management Plan, Civic Engagement
Summary Report, June 2021**

Executive Summary

From March 15, 2021, through April 15, 2021, the National Park Service (NPS) invited the public to provide input as part of a civic engagement process for the development of a comprehensive trails management plan (“the plan,” “trails plan”) for Chattahoochee River National Recreation Area (“the park”).

To introduce the planning effort, the National Park Service held two virtual public meetings to discuss the development of the trails plan and answer questions about the project. These virtual public meetings were held on Thursday, March 25 at 6:30 p.m. (EST) and on Friday, March 26 at 1:30 p.m. (EST). During the virtual meetings, NPS staff explained the planning process, showcased methods for public comment, and answered participants’ questions.

Park staff developed two methods for submitting plan comments online. In the first method, the public could submit written comments by mail, email, and on the project website at https://parkplanning.nps.gov/CRNRA_Trails. In the second method, the public could submit comments online using an interactive platform called a “storymap,” which provided trail proposals and the ability to upload concerns, designs, and suggestions (accessed at <https://arcg.is/1PKmna>).

At the close of this comment period, the Park Service received more than 300 correspondences on the project website. In addition, the project storymap logged more than 190 correspondences. Of the correspondences submitted on the project website, 96% were from Georgia residents and less than 1% was from residents of Tennessee, Colorado, Alabama, and Massachusetts.

This report provides an overview of the planning process and a summary of public comments grouped into thematic topics to ensure a complete and thorough analysis.

Planning Process

The planning process began in spring of 2018 when the National Park Service contracted with Applied Trails Research to gather preliminary public input via an online “social pinpoint” interface. This valuable public input provided an understanding of public perceptions of issues, opportunities, and priorities with the trail system; what trail users value about the system; current trail uses and conflict areas; and aspects of the trail system that should be retained, expanded, or modified.

This input informed a collaborative preliminary design process between Applied Trails Research and the NPS planning team. This preliminary design process identified refined desired conditions for trails in each park unit, a draft layout of a sustainable trail system in each park unit, and a suite of preliminary management strategies that would apply parkwide. These three elements were included in the Chattahoochee River NRA Preliminary Trails Management Plan that was released for public review and comment in March 2021.

The public input on the Preliminary Trails Management Plan will inform modifications to the desired conditions, trail designs, and parkwide management strategies. The planning team is in the process of refining the plan based on this public input. The next step is for the NPS planning team to prepare a comprehensive trails management plan and conduct associated environmental compliance. The comprehensive trails management plan will undergo another round of public review and comment before being finalized. The National Park Service will announce this public comment period by media release on the project website at https://parkplanning.nps.gov/CRNRA_Trails and via other sources.

Throughout the planning process, the Park Service has sought and will continue to engage with the public and park partners to gather input on the project. The NPS planning team is grateful to those who engaged in the most recent public comment process and appreciate the robust and thoughtful input. This input is key to developing a plan that best serves the park resources, its managers, its stakeholders and community members, and its trail users.

Comments by Topic Themes

Trail Building and Maintenance

Many commenters expressed a desire for better trailhead signs, new trail markings to indicate changes in difficulty of terrain, more directional signs or arrows, more interpretive signs, and posted regulations (e.g., speed limits for bikes). Some commenters expressed a desire to keep equestrian trails, add additional accessible paved trails, and add formal river/fishing access and overlooks. A number of commenters suggested placing signs to enforce visitors to “stay off the trails when wet” to prevent erosion.

Regarding trail surfaces, commenters expressed a wide range of preferences, including crushed gravel, paved surfaces, and natural surfaces. Suggestions included more vegetation pruning, stabilizing areas along the riverbank (e.g., short boardwalks or viewing platforms); filling in ruts by bridges and walkways over water, sweeping debris on bridges, and leveling off large indentations on trails. Commenters also expressed concern with the feasibility of maintaining the additional proposed trails, given the funding and staffing limitations.

Recreational Use: Bicycling

A number of commenters noted the value of having opportunities to bike at the park and a desire for more trails to accommodate safe mountain biking and casual riding. Many commenters desire bike trails that provide diverse opportunities, such as paved, gravel, and single-track trails, for riders of all skill levels. Respondents also expressed a desire for more connecting trails to disperse visitors throughout the park and reduce congestion on trails.

Feedback suggested that bike use on trails contributes more to erosion than pedestrian use on trails. Many commenters noted safety concerns on multiuse trails related to user conflicts between bicyclists and pedestrians, hikers, and runners and a few commenters noted concerns with bicyclists’ high speeds. Both bicyclists and pedestrians expressed concerns about the safety of multiuse trails. Commenters provided the following suggestions to address safety concerns with multiuse trails: separation of users by trail (bicyclist-only trails and pedestrian-only trails), exclusive use days (e.g., Monday/Wednesday/Friday/Sunday for bikes and Tuesday/Thursday/Saturday for hikers), enforcing a bike speed limit on multiuse trails, and opening up the entire park to bicycles and pedestrians to disperse use throughout the park.

Commenters also noted specific locations where bike connections would improve the user experience and suggested improvements to enhance the user experience within Cochran Shoals, including stabilizing soft shoulders, maintaining challenging terrain, and improving navigability of rock armoring.

Recreational Use: Climbing

Some commenters appreciated the inclusion of climbing resources at Bowmans Island and Vickery Creek in the plan and urged this planning effort to also include and recognize specific additional climbing access trails in other units (such as Vickery Creek, Cochran Shoals, Palisades, Medlock Bridge, Jones Bridge, and Island Ford).

Resource Concerns

Several commenters expressed support for protecting both water quality and wildlife and removing invasive vegetation on trails when implementing the plan. Feedback also included concern about dogs, such as conflicts between dogs and park visitors and resources. Suggestions to address these concerns included enforcing the dogs-on-leash policy and installing receptacles to hold pet waste.

Partnerships and Volunteers

A few commenters suggested that the park explore partnerships with various organizations (e.g., nonprofits, cities, federal agencies) to assist in the planning and ongoing maintenance of the trails and to integrate justice, equity, diversity, and inclusion into the plan.

Other suggestions included using a volunteer program to help support trail design, install educational signs, and promote safety on the trails. These commenters suggested offering “part-time” and “full-time” volunteer opportunities with targeted marketing to veterans, retired individuals, college students, and academic departments at local high schools and colleges.

Facilities

Several commenters conveyed appreciation for facilities in park units. Others expressed a desire for restroom facilities in every unit (especially in parking areas) and more trash receptacles and bicycle racks at key locations throughout the park.

Chattahoochee RiverLands Greenway

Many respondents expressed support for integrating the recently completed Chattahoochee RiverLands Greenway Study into the comprehensive trails management plan (see “Additional Context on the Chattahoochee RiverLands Greenway Study and National Park Service” on page 5). These commenters support the full integration of the RiverLands Greenway for the following reasons: enhanced regional connectivity, dispersed visitor use across communities, enhanced bicycle access to the park, and enhanced recreational opportunities.

Some respondents opposed integrating the RiverLands Greenway into the trails plan for the following reasons: reduction of the natural character of park units through increased development and use, increased congestion, and impacts to natural resources in the park.

The majority of commenters expressed appreciation for the integration of the RiverLands Greenway in certain park units. However, other commenters were concerned that the proposed RiverLands’ Preferred Alignment (see the callout box on page 7 for additional context) is not proposed for inclusion in the following units: Bowmans Island, Orrs Ferry, Abbotts Bridge, Johnson Ferry (outside the scope of this plan), and a portion of Settles Bridge. Some commenters would also like the plan to include a new pedestrian bridge/crossing to connect Morgan Falls Overlook Park (owned and managed by the City of Sandy Springs) to the Johnson Ferry North unit and also to nearby sections of the RiverLands’ Preferred Alignment.

Many commenters expressed frustration around the park’s proposed adoption of the RiverLands’ Practical Alignment in certain units instead of uniformly integrating the RiverLands’ Preferred Alignment in the trails plan. Commenters expressed concern that if the Preferred Alignment is not fully integrated into the park’s plan, the RiverLands Greenway would be limited in its success and viability. Some commenters also expressed frustration about perceived communication issues between the RiverLands team and the NPS planning team. Commenters conveyed frustration that some local jurisdictions have already procured funding to develop trails proposed in the RiverLands’ Preferred Alignment that travel through park units and are not proposed for adoption in the park’s trails plan. Respondents recommended holding meetings with all affected cities and counties before publicizing the next draft of the trails plan.

Additional Context on the Chattahoochee RiverLands Greenway Study and National Park Service

The recent Chattahoochee RiverLands Greenway Study reconsiders the region's relationship to the river and proposes a 100-mile uninterrupted multiuse linear network of greenways, blueways, and tributary trails connecting people to parks, the river, and other key destinations. Portions of the proposed greenway connect to units at Chattahoochee River National Recreation Area, and the National Park Service is committed to advancing these regional trail connections. The Chattahoochee RiverLands Greenway Study is funded in partnership by Atlanta Regional Commission, The Trust of the Public Land, and Cobb County.

The RiverLands Greenway study recommends a Preferred Alignment at various locations throughout the study area but also recognizes that in many places this alignment may prove infeasible. The RiverLands Study offers multiple alignments, including a Practical Alignment, to ensure that the Greenway has continuous connections along its entire length. According to the RiverLands report, the "Practical Alignment takes advantage of existing trail infrastructure, easements, or publicly owned land where hurdles to trail implementation are comparatively lower."

Inclusion of proposed greenway alignments in specific units in the park's preliminary trails management plan was based on maintaining desired resource conditions as defined in the park's 2009 General Management Plan and other operational considerations. The general management plan guides park management and identifies zones that describe the appropriate balance between visitor activities and resource protection. In some areas of the park, the desired condition is to protect natural resources along the riverbank as buffer zones from development.

In units where park staff found that the RiverLands' Preferred Alignment was not viable due to conflicts with the general management plan's desired conditions and the park's operational capacity to manage for increased visitation, park staff encouraged use of the RiverLands' Practical Alignment.

Park staff will continue to engage and consult with RiverLands' stakeholders to identify opportunities for including the RiverLands Greenway where appropriate as the NPS planning process continues in the development of the comprehensive trails management plan.

Support for the Comprehensive Trails Management Plan

Several commenters expressed gratitude for the following elements of this plan: adding more mileage of trails, enhancing Atlanta-area sustainability and connectivity, providing big-picture trail connections, proposing different trail surface types, including a long-term vision, providing a high level of detail, expanding trails to support Atlanta's growing population, communicating through various platforms, and protecting water quality.

Critiques of the Comprehensive Trails Management Plan

Some commenters expressed concern that new trails and trail access points might result in increased congestion, higher demands on parking leading to overflow on residential streets, and increased crime in adjacent neighborhoods. A few commenters also provided specific suggestions to further refine the goals, purpose, and need language stated in this plan. A small number of commenters critiqued the trail designs in the plan for lacking familiarity of the units.

Out of Scope

A number of comments were outside of the scope of this trails plan. Park staff acknowledges that these comments are important issues to the park and surrounding communities and is exploring solutions to these concerns in separate efforts. This report includes these comment summaries to provide a holistic picture of comments received.

As a reminder, the purpose of the comprehensive trails management plan will be "to provide guidance for improving trail conditions and connecting the 15 park units within the National Recreation Area as part of a sustainable, accessible, and regionally integrated trail system."

Parking and Roads

Some commenters expressed a desire for parking expansion throughout the entire park and provided specific recommendations for locations of parking expansions. Respondents pointed to safety concerns about narrow roads providing access to park units. While this trails plan will identify potential management strategies for parking at certain trailheads, addressing parkwide parking management and expansion is outside the scope of this plan. Parking concerns will be addressed through other efforts and discussions with municipalities and adjacent landowners. The National Park Service is actively developing specific parking lot projects across the park and seeking funds for additional areas.

River-Related Recreation

Some commenters expressed a desire for paddle-up campsites, ADA-accessible river access, stabilization of the riverbank, increased opportunities for fishing and wildlife viewing, and safer river access at specific boat launches. A few commenters expressed a desire for increased enforcement to reduce the frequency of littering and visitors' consumption of alcohol on park property.

Connectivity to Trail Systems Well Outside of the Park Boundary

One of the goals of this trails plan is to "enhance or enable appropriate connectivity with existing or planned regional trail networks." A few commenters expressed a desire for the plan to connect to other trail systems well outside of the park boundary, which are geographically distant from the park and out of scope for this plan. These trail systems include The River Line, Blankets Creek and other mountain biking areas, Bolton-area Parks (City of Atlanta), Sweetwater Creek State Park, Coweta County, and Heard County.

Johnson Ferry North to Hyde Farm Connection

Several commenters stated a desire for a connection from Johnson Ferry North to Hyde Farm. Before beginning the trails plan, park staff initiated a separate planning effort to explore trail connections between Johnson Ferry North and Hyde Farm in partnership with Cobb County. Park staff intends to maintain these projects as two separate planning efforts.

Appendix H: List of Preparers

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CHATTAHOOCHEE RIVER NATIONAL RECREATION AREA

COMPREHENSIVE TRAILS MANAGEMENT PLAN / ENVIRONMENTAL ASSESSMENT • 2022

