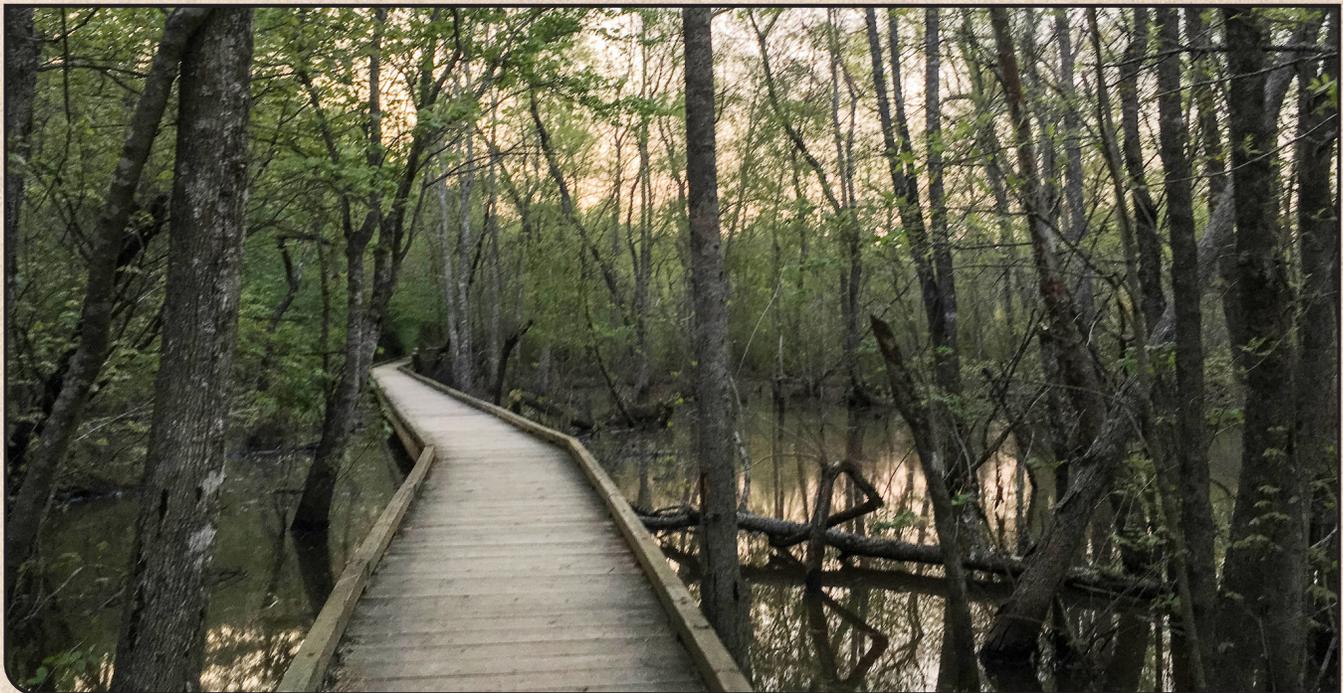




# Chattahoochee River National Recreation Area

## Comprehensive Trails Management Plan / Environmental Assessment

2022



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# Contents

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Executive Summary.....	ix
Purpose and Need.....	ix
Alternatives.....	ix
Alternative 1: No Action (Continue Current Management).....	ix
Alternative 2: Action Alternative (National Park Service Preferred Alternative) .....	x
Chapter 1: Purpose and Need .....	1
Background .....	1
Project Purpose, Needs, and Goals .....	2
Planning Context.....	4
Relationship to Other Regional Planning Efforts .....	4
Relationships to Other Park Plans.....	5
General Management Plan: Management Zones .....	5
Resource Impact Topics .....	7
Impact Topics Retained for Further Analysis.....	7
Impact Topics Considered but Dismissed from Further Analysis.....	7
Chapter 2: Alternatives .....	12
Introduction .....	12
NPS Bicycle Rule .....	12
Alternative 1: No-Action Alternative (Continue Current Management).....	14
Alternative 2: NPS Preferred Alternative/Proposed Action .....	15
Overview.....	15
Visitor Use Management.....	18
Trail Types.....	19
Trailheads and Trail Access Points.....	20
Trail and Trailhead Naming .....	21
Signage and Trail Markers.....	21
Greenway.....	21
Accessibility .....	23
Restored Trails .....	23
Unauthorized Visitor-Created Trails.....	23
Invasive Species Management .....	24
Trail Rehabilitation.....	24
Final Alignments for Trails .....	24
Implementation .....	24

Desired Conditions and Zoning .....	25
Unit-Specific Descriptions.....	25
Mitigation Measures Applied to Alternative 2 (NPS Preferred Alternative).....	37
General.....	37
Visitor Safety.....	37
Natural Resources .....	38
Wetlands .....	40
Cultural Resources .....	41
Trail Development and Management .....	42
Staffing and Cost Estimates.....	42
Chapter 3: Affected Environment and Impact Analysis .....	44
Introduction .....	44
Vegetation .....	44
Affected Environment (Current and Expected Future Conditions of Resources) .....	44
Impacts on Vegetation .....	45
Wildlife—Birds, Denning Mammals, Herptiles .....	47
Affected Environment (Current and Expected Future Conditions of Resources) .....	47
Impacts on Wildlife .....	50
Soils .....	53
Affected Environment (Current and Expected Future Conditions of Resources) .....	53
Impacts on Soils.....	54
Wetlands .....	56
Affected Environment (Current and Expected Future Conditions of Resources) .....	56
Impacts on Wetlands.....	58
Visitor Use and Experience .....	60
Affected Environment (Current and Expected Future Conditions of Resources) .....	60
Visitor Access and Circulation .....	61
Visitor Opportunities .....	61
Visitation Trends.....	62
Trail Management Trends .....	64
Expected Future Conditions .....	64
Impacts on Visitor Use and Experience .....	64
Archeological Resources.....	68
Affected Environment (Current and Expected Future Conditions of Resources) .....	68
Impacts on Archeological Resources .....	70

Chapter 4: Consultation and Coordination .....	71
Public Involvement .....	71
Agency Consultation.....	71
US Fish and Wildlife Service .....	71
Georgia Department of Natural Resources.....	72
State Historic Preservation Office .....	72
Tribal Consultation .....	72
United States Army Corps of Engineers .....	72
Appendix A: Unit Maps, Alternative 1, No Action (Existing Conditions) .....	A-1
Appendix B: Alternative 2 (NPS Preferred) Actions, Visitor Capacity Management Strategies, and Resultant Trail System .....	B-24
Appendix C: Trail Types .....	C-100
Appendix D: Indicators and Thresholds .....	D-102
Appendix E: Visitor Capacity.....	E-112
Appendix F: Sustainable Trail Guidelines.....	F-149
Appendix G: Comprehensive Trails Management Plan, Civic Engagement Summary Report, June 2021 .....	G-169
Appendix H: List of Preparers .....	H-175
References.....	R-176

## Tables

---

Table 1. Federally Endangered, Threatened, and Candidate Species That May Occur in Chattahoochee River National Recreation Area (as of December 2021) .....	9
Table 2. Comparison of Existing and Proposed Trail System by Mileage .....	12
Table 3. Existing Trail Mileage and Allowable Use .....	15
Table 4. Proposed Trails Management: Alternative 2 Actions and Mileage by Unit .....	17
Table 5. Trail Classes by Miles and Unit, Alternative 2.....	20
Table 6. Estimated Costs and Full-Time Employees (FTE) for 20 Years .....	43
Table 7. New Construction Impacts to Vegetation, by Vegetation Type .....	45
Table 8. Current Conditions of Habitat Health .....	49
Table 9. Action Alternative Conditions of Habitat Health .....	50
Table 10. Current Conditions of Soil Sustainability .....	54
Table 11. Action Alternative Conditions of Soil Sustainability .....	55
Table 12. Summary of Acreages and Percentages of Major Wetland Types .....	56
Table 13. Summation of Impacts to Wetlands.....	59
Table E-1. Trail Use Estimates Based on Traffic Counter Data.....	E-122
Table E-2. Trail Use Estimates Based on Trail Counter-Calibrated Strava Data.....	E-123
Table E-3. Estimates of Current Trail Use.....	E-125
Table F-1. Trail Type 1—Natural Surface Pedestrian Trail Characteristics.....	F-151
Table F-2. Trail Type 2 Natural Surface Multiuse Trail Characteristics .....	F-152
Table F-3. Trail Type 1 Universal Trail Characteristics .....	F-153
Table F-4. Trail Type 4 Aggregate Multiuse Trail Characteristics .....	F-154

# Figures

---

Figure 1. Units of Chattahoochee River National Recreation Area .....	3
Figure 2. Parkwide Annual Recreational Visits, 2000–2019 .....	62
Figure 3. Comparison of Trail Counts Before and After Start of COVID-19 Pandemic.....	63
Figure A-1. Existing Trail System – Bowmans Island .....	A-1
Figure A-2. Existing Trail System – Bowmans Island North .....	A-2
Figure A-3. Existing Trail System – Orrs Ferry .....	A-3
Figure A-4. Existing Trail System – Settles Bridge.....	A-4
Figure A-5. Existing Trail System – Settles Bridge North.....	A-5
Figure A-6. Existing Trail System – McGinnis Ferry .....	A-6
Figure A-7. Existing Trail System – Suwanee Creek .....	A-7
Figure A-8. Existing Trail System – Abbotts Bridge .....	A-8
Figure A-9. Existing Trail System – Abbotts Bridge South.....	A-9
Figure A-10. Existing Trail System – Medlock Bridge.....	A-10
Figure A-11. Existing Trail System – Jones Bridge North .....	A-11
Figure A-12. Existing Trail System – Jones Bridge South.....	A-12
Figure A-13. Existing Trail System – Holcomb Bridge .....	A-13
Figure A-14. Existing Trail System – Island Ford North .....	A-14
Figure A-15. Existing Trail System – Island Ford South.....	A-15
Figure A-17. Existing Trail System – Gold Branch .....	A-17
Figure A-18. Existing Trail System – Johnson Ferry South.....	A-18
Figure A-19. Existing Trail System – Cochran Shoals, Sope Creek Trailhead .....	A-19
Figure A-20. Existing Trail System – Cochran Shoals, Columns Drive Trailhead .....	A-20
Figure A-21. Existing Trail System – Cochran Shoals, Interstate North/Powers Island .....	A-21
Figure A-22. Existing Trail System – Palisades North .....	A-22
Figure A-23. Existing Trail System – Palisades South .....	A-23
Figure B-1. Actions Associated with Alternative 2 – Bowmans Island .....	B-26
Figure B-2. Resultant Trail System, Alternative 2 – Bowmans Island.....	B-27
Figure B-3. Actions Associated with Alternative 2 – Bowmans Island North.....	B-28
Figure B-4. Resultant Trail System, Alternative 2 – Bowmans Island North .....	B-29
Figure B-5. Actions Associated with Alternative 2 – Orrs Ferry.....	B-32
Figure B-6. Resultant Trail System, Alternative 2 – Orrs Ferry .....	B-33
Figure B-7. Actions Associated with Alternative 2 – Settles Bridge.....	B-36
Figure B-8. Resultant Trail System, Alternative 2 – Settles Bridge .....	B-37
Figure B-9. Actions Associated with Alternative 2 – Settles Bridge North .....	B-38

Figure B-10. Resultant Trail System, Alternative 2 – Settles Bridge North.....	B-39
Figure B-11. Actions Associated with Alternative 2 – McGinnis Ferry.....	B-42
Figure B-12. Resultant Trail System, Alternative 2 – McGinnis Ferry .....	B-43
Figure B-13. Actions Associated with Alternative 2 – Suwanee Creek.....	B-46
Figure B-14. Resultant Trail System, Alternative 2 – Suwanee Creek .....	B-47
Figure B-15. Actions Associated with Alternative 2 – Abbotts Bridge.....	B-50
Figure B-16. Resultant Trail System, Alternative 2 – Abbotts Bridge .....	B-51
Figure B-17. Actions Associated with Alternative 2 – Abbotts Bridge South .....	B-52
Figure B-18. Resultant Trail System, Alternative 2 – Abbotts Bridge South.....	B-53
Figure B-19. Actions Associated with Alternative 2 – Medlock Bridge.....	B-56
Figure B-20. Resultant Trail System, Alternative 2 – Medlock Bridge .....	B-57
Figure B-21. Actions Associated with Alternative 2 – Jones Bridge North .....	B-60
Figure B-22. Resultant Trail System, Alternative 2 – Jones Bridge North.....	B-61
Figure B-23. Actions Associated with Alternative 2 – Jones Bridge South.....	B-62
Figure B-24. Resultant Trail System, Alternative 2 – Jones Bridge South .....	B-63
Figure B-25. Actions Associated with Alternative 2 – Holcomb Bridge.....	B-66
Figure B-26. Resultant Trail System, Alternative 2 – Holcomb Bridge .....	B-67
Figure B-27. Actions Associated with Alternative 2 – Island Ford North .....	B-70
Figure B-28. Resultant Trail System, Alternative 2 – Island Ford North .....	B-71
Figure B-29. Actions Associated with Alternative 2 – Island Ford South.....	B-72
Figure B-30. Resultant Trail System, Alternative 2 – Island Ford South .....	B-73
Figure B-31. Actions Associated with Alternative 2 – Vickery Creek .....	B-76
Figure B-32. Resultant Trail System, Alternative 2 – Vickery Creek.....	B-77
Figure B-33. Actions Associated with Alternative 2 – Gold Branch.....	B-80
Figure B-34. Resultant Trail System, Alternative 2 – Gold Branch .....	B-81
Figure B-35. Actions Associated with Alternative 2 – Johnson Ferry South.....	B-84
Figure B-36. Resultant Trail System, Alternative 2 – Johnson Ferry South.....	B-85
Figure B-37. Actions Associated with Alternative 2 – Cochran Shoals, Sope Creek Trailhead .....	B-88
Figure B-38. Resultant Trail System, Alternative 2 – Cochran Shoals, Sope Creek Trailhead.....	B-89
Figure B-39. Actions Associated with Alternative 2 – Cochran Shoals, Columns Drive Trailhead .....	B-90
Figure B-40. Resultant Trail System, Alternative 2 – Cochran Shoals, Columns Drive Trailhead.....	B-91
Figure B-41. Actions Associated with Alternative 2 –Cochran Shoals, Interstate North/Powers Island.....	B-92
Figure B-42. Resultant Trail System, Alternative 2 – Cochran Shoals, Interstate North/Powers Road.....	B-93
Figure B-43. Actions Associated with Alternative 2 – Palisades North .....	B-96
Figure B-44. Resultant Trail System, Alternative 2 – Palisades North.....	B-97

Figure B-45. Actions Associated with Alternative 2 – Palisades South.....	B-98
Figure B-46. Resultant Trail System, Alternative 2 – Palisades South .....	B-99
Figure E-1. Parkwide Annual Recreational Visits, 2000–2019.....	E-114
Figure E-2. Parkwide Average Monthly Visitation, 2016–2019 .....	E-115
Figure E-3. Monthly Trail Counts on High-Use Trails.....	E-115
Figure E-4. Monthly Trail Counts on Low-Use Trails .....	E-116
Figure E-5. Average Trail Use by Day of the Week .....	E-117
Figure E-6. Average Use of the Fitness Loop by Time of Day .....	E-118
Figure E-7. Average Use of Other Trails by Time of Day.....	E-118
Figure E-8. Trail Use Volumes by Hour on the Fitness Loop Bridge, March 2021 Data Source: Strava Metro Dashboard .....	E-119
Figure E-9. Comparison of Strava Trips and Trail Counts at Fitness Loop Bridge .....	E-120
Figure F-1. Typical Section of Natural Surface Pedestrian Trail (Island Ford) .....	F-151
Figure F-2. Typical Section of Natural Surface Multiuse Trail (Cochran Shoals) .....	F-152
Figure F-3. Typical Section of Universal Access Trail (Cochran Shoals) .....	F-153
Figure F-4. Typical Section of Aggregate Multiuse Trail (Cochran Shoals).....	F-154

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## Executive Summary

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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.

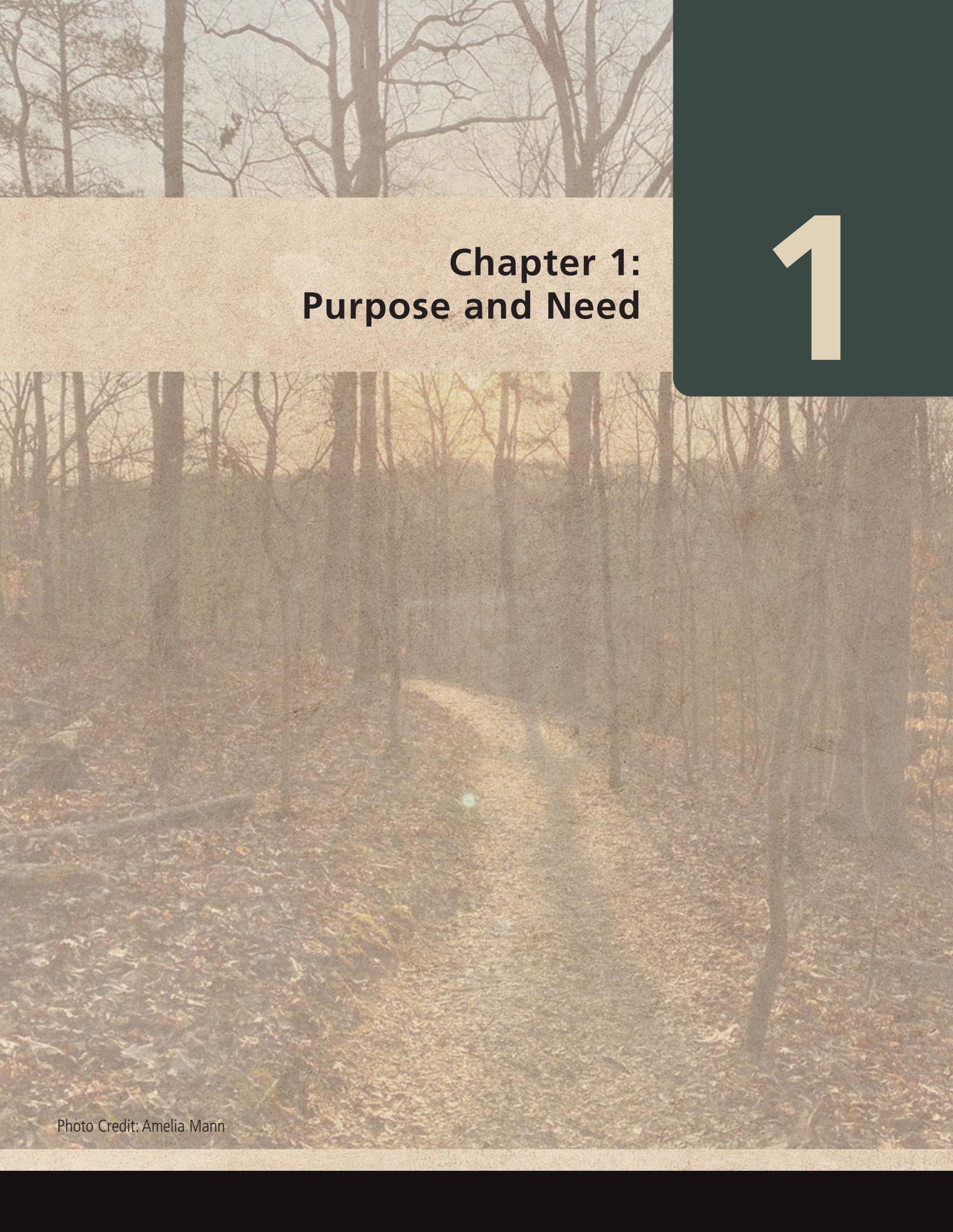
Under alternative 1, the existing trail system would account for 66.9 miles of designated trail use in 15 units in Chattahoochee River National Recreation Area. Maps of the of the existing trail system under alternative 1 (the current system) are included in appendix A. Table 3 in chapter 2 provides 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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Photo Credit: Shawn Taylor

## Chapter 1: Purpose and Need

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### 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

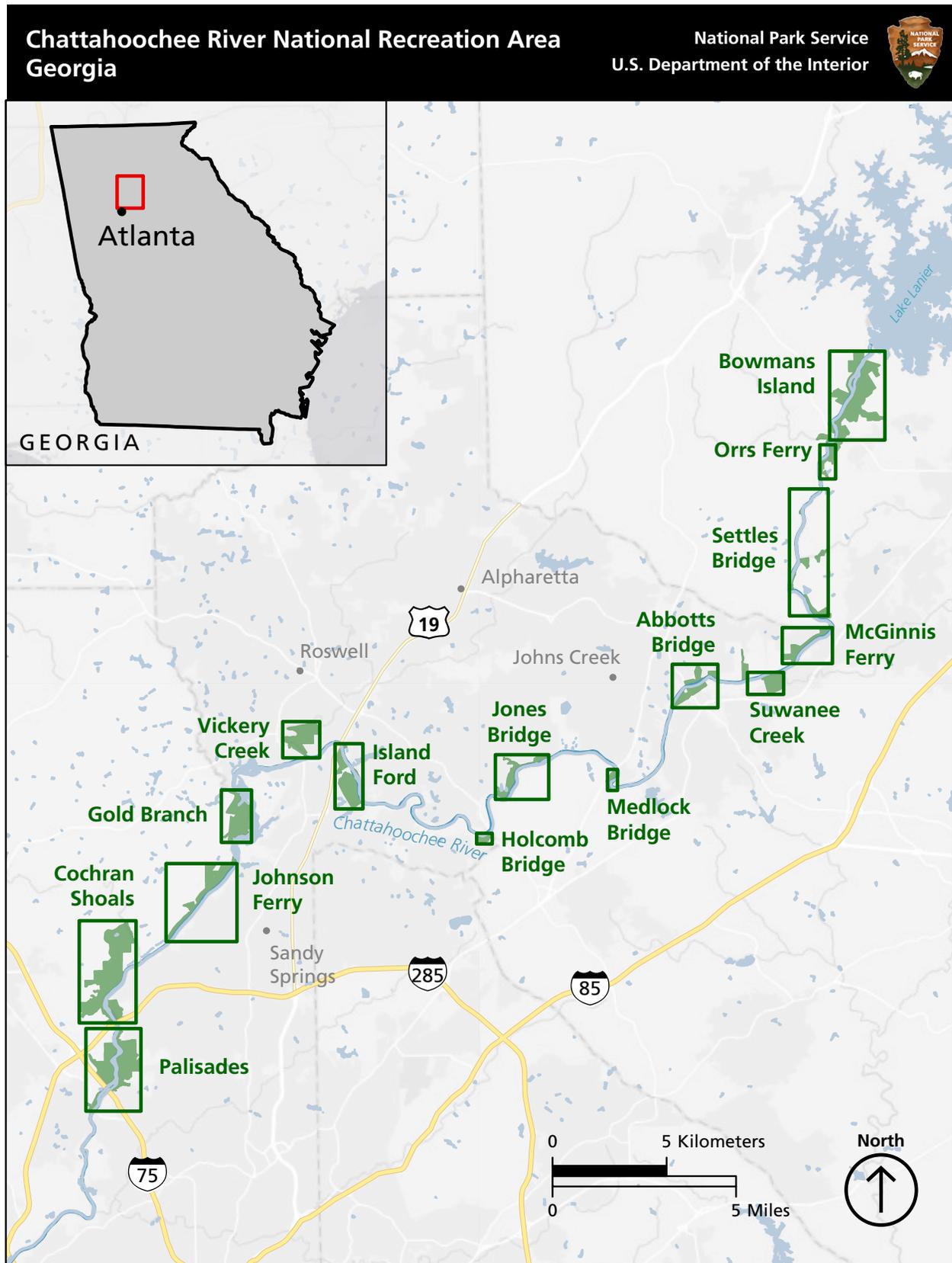
- develop a more cohesive trail network within and between individual park units within the Chattahoochee River National Recreation Area and the Atlanta regional trail network;
- enhance visitor use and the visitor experience;
- adjust park zoning to match desired visitor experience; and
- protect natural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

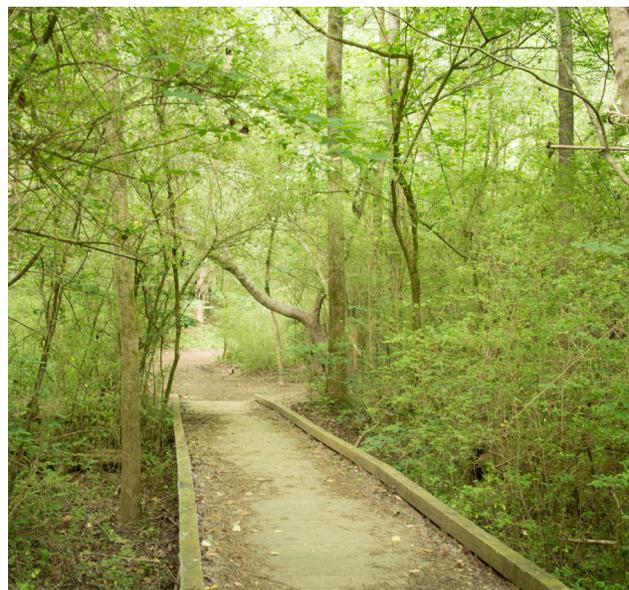


Photo Credit: Shawn Taylor

## 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*),

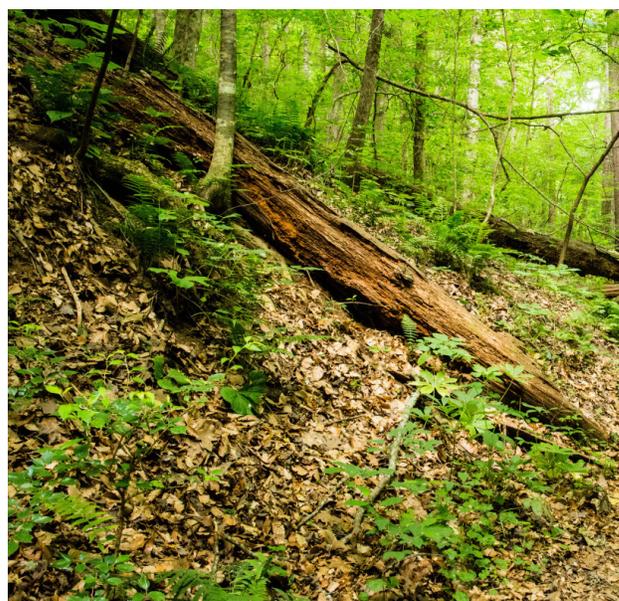


Photo Credit: Shawn Taylor

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.

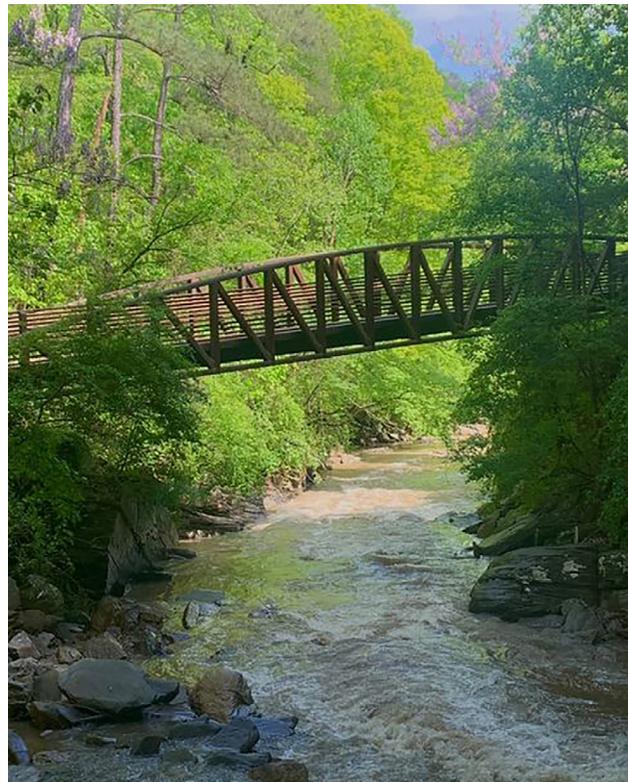


Photo Credit: Katie Monson

#### **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**

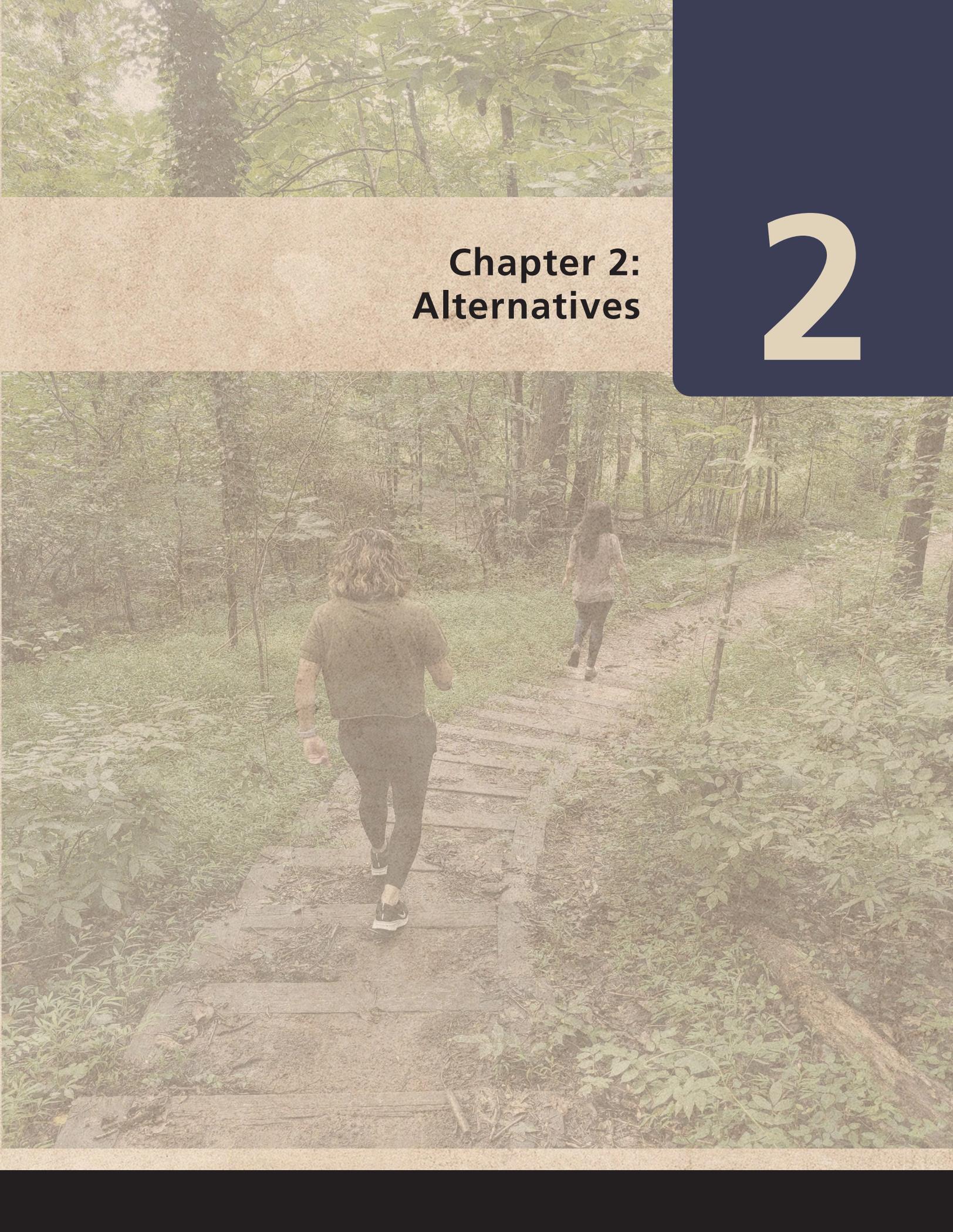
Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, requires the consideration of the effects of climate change in NEPA reviews. Climate change is relevant to this plan, as increased temperatures, more frequent dry periods, and heavier 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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**Chapter 2:  
Alternatives**

**2**

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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
<b>Total trail system mileage</b>	<b>66.9</b>	<b>99.3</b>

\* 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)
<b>Total</b>	<b>66.9</b>	

## 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)*	Multiuise— 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
<b>Totals:</b>	<b>66.9</b>	<b>3.1</b>	<b>19.6</b>	<b>43.9</b>	<b>4.9</b>	<b>99.3</b>	<b>16.8</b>	<b>21.9</b>

\*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
<b>Total</b>	<b>73.7</b>	<b>8.7</b>	<b>3.6</b>	<b>13.2</b>

### 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 Abbots 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 Abbots 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 Abbots 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 Abbots 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.

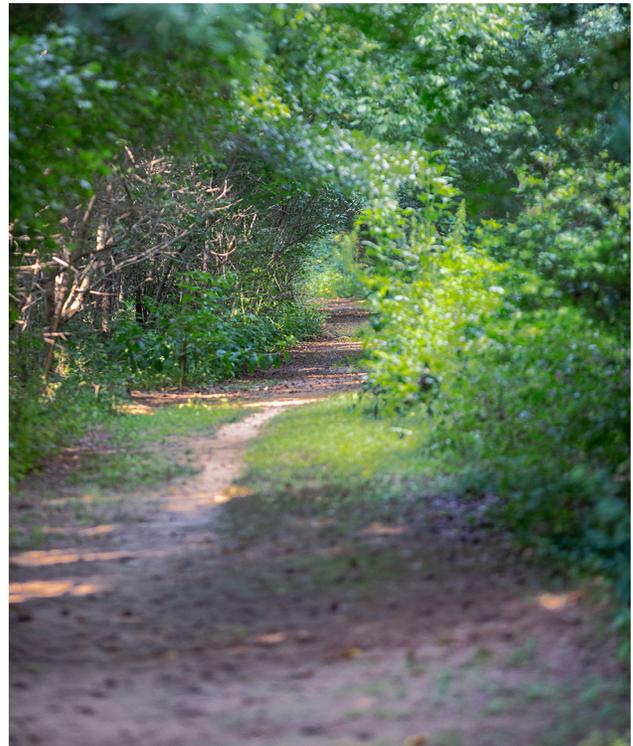


Photo Credit: Harris Clayton

#### **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

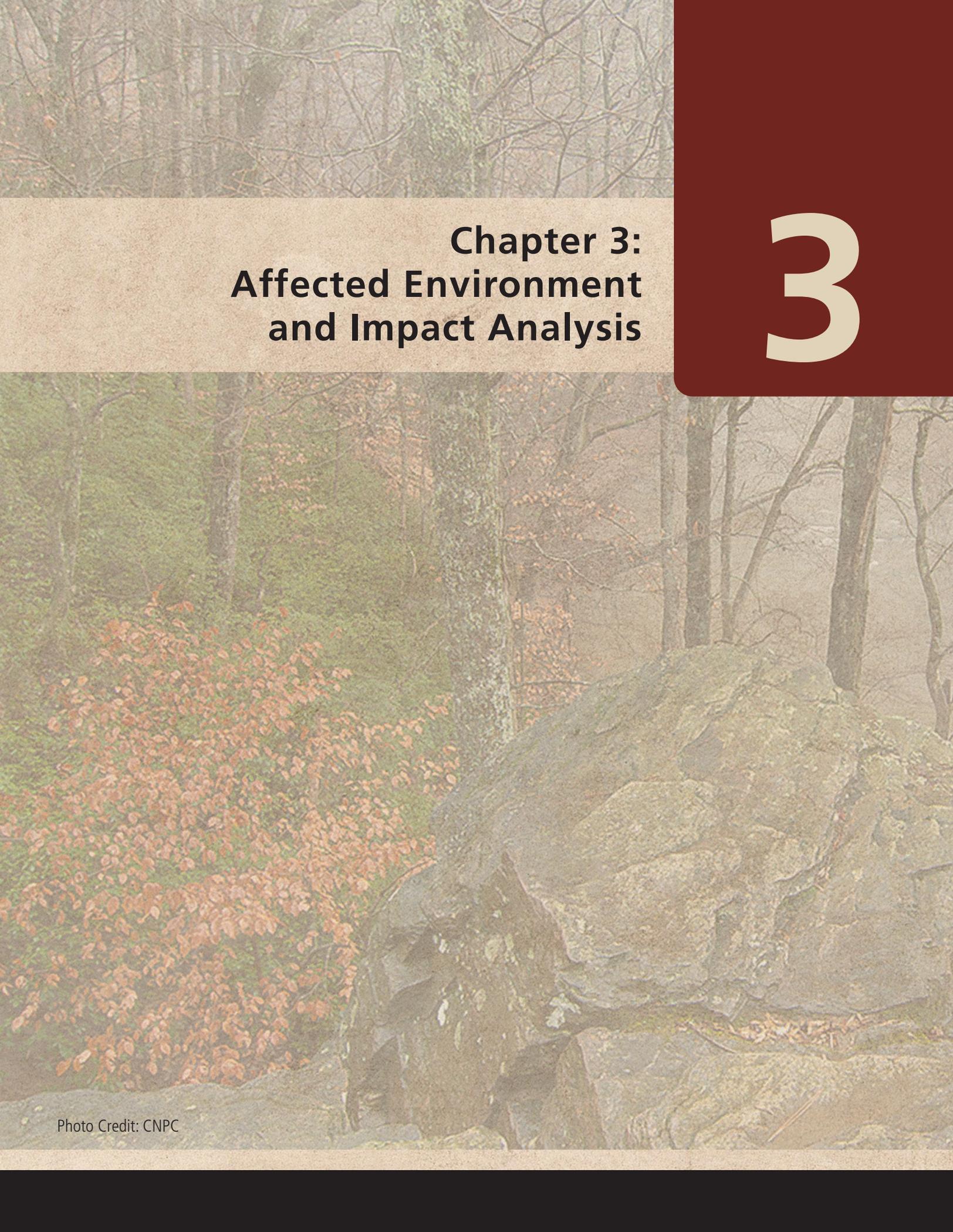
used for budgetary purposes or implementation funding requests. When the actions in the comprehensive trails plan are implemented, actual costs would likely vary from what is presented below.

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

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

\* Operation of the National Park System

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



## **Chapter 3: Affected Environment and Impact Analysis**

# 3

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## Chapter 3: Affected Environment and Impact Analysis

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### 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.

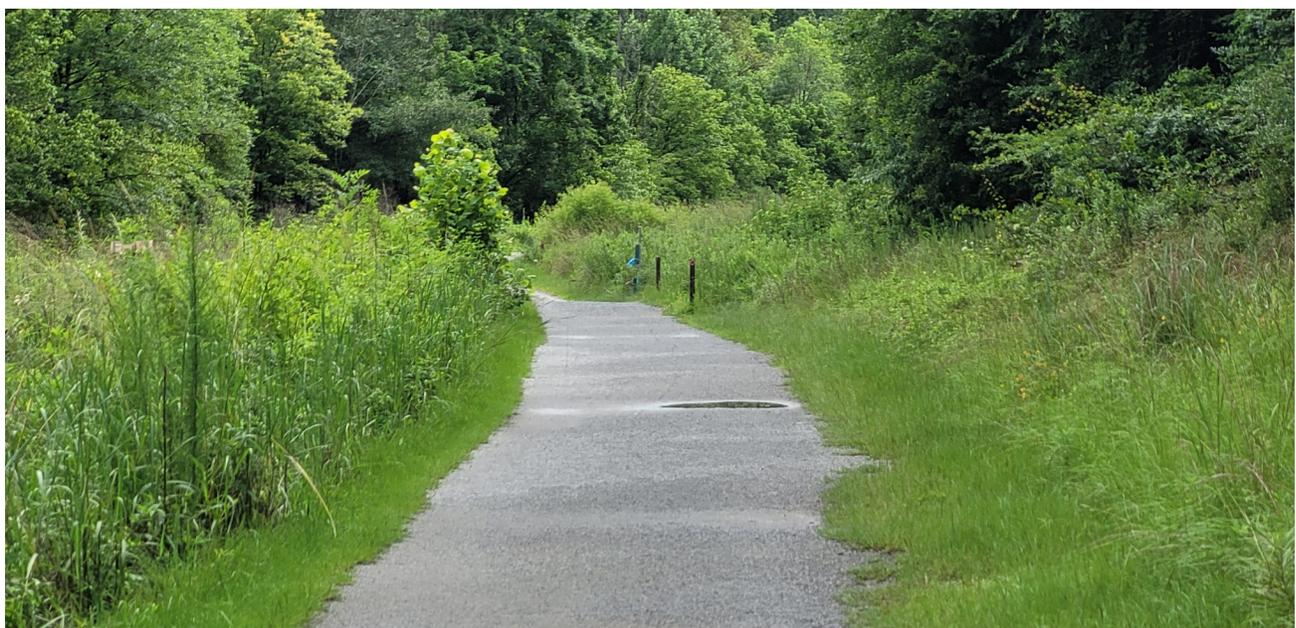
Table 7. New Construction Impacts to Vegetation, by Vegetation Type

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%
<b>Total</b>	<b>151.9</b>	<b>100.0%</b>

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

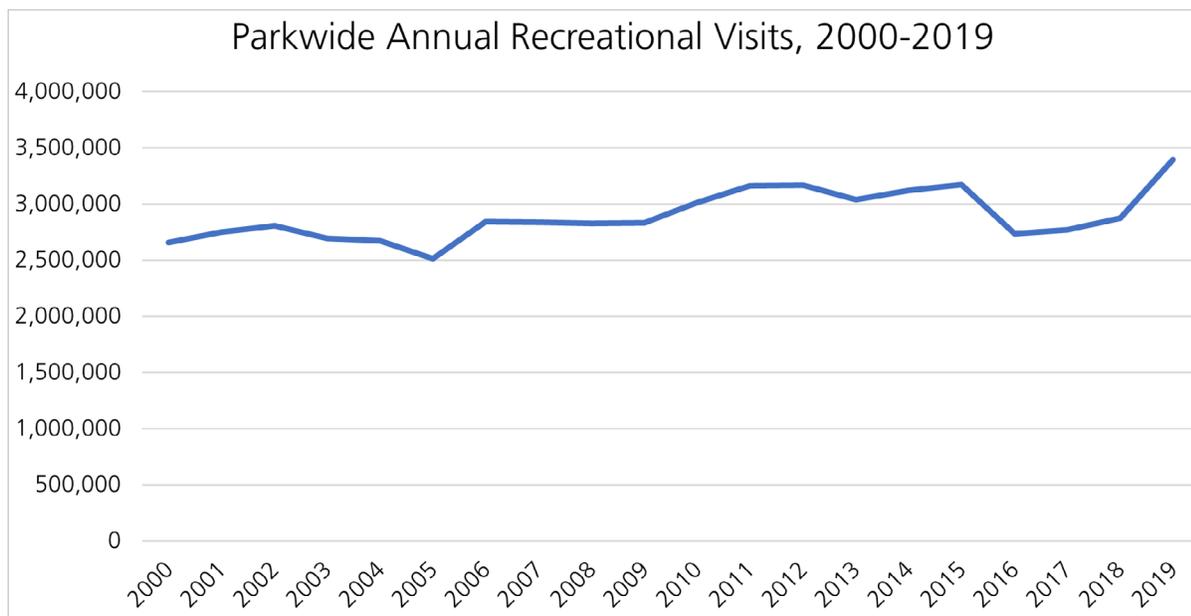
along the flat 2-mile Fitness Loop. They’d be likely to pass or be passed by many others on a run, including some local cross-country teams. Alternatively, they could ride their bike along the 9.4 miles of multiuse trails at Sope Creek, being sure to follow the directional signage for the day and allow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

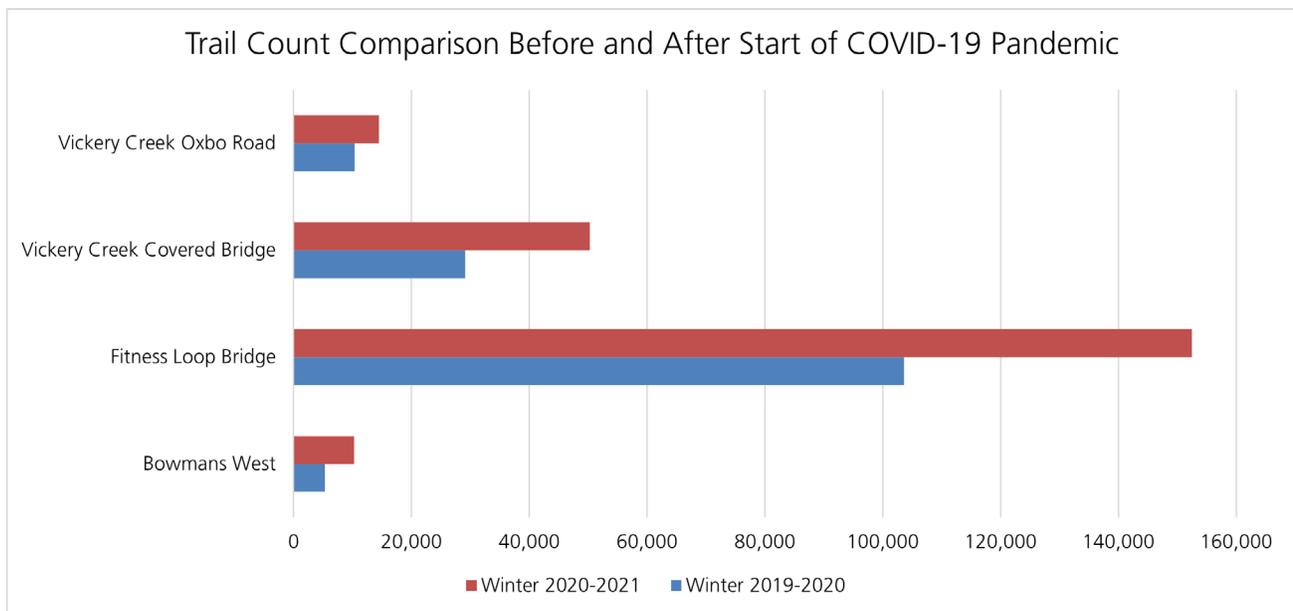


Figure 3. Comparison of Trail Counts Before and After Start of COVID-19 Pandemic

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**

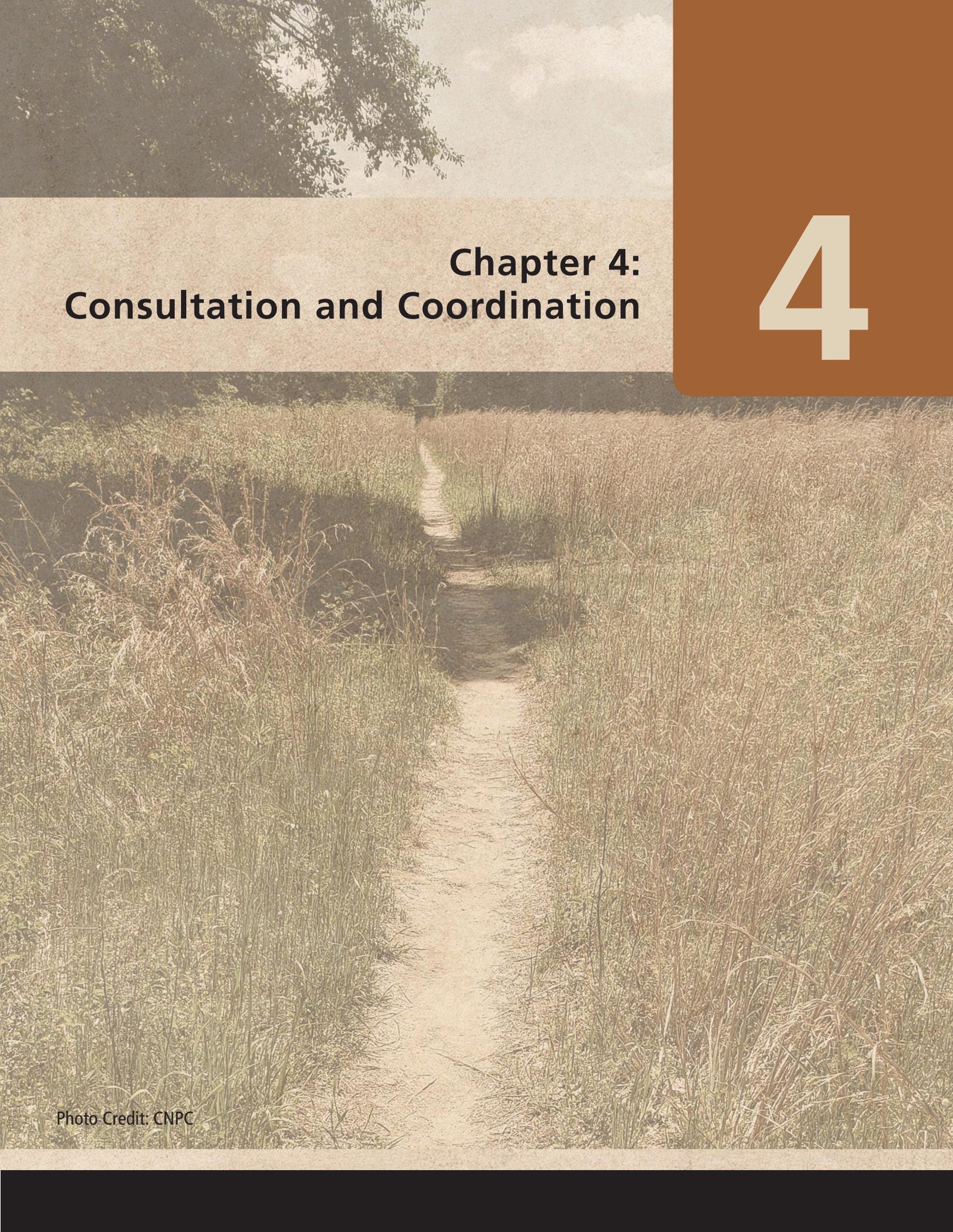
Preliminary analysis has indicated that proposed trail work, including ground disturbance associated with the closure of existing trails or the construction of new trails, would occur in the vicinity of known archeological resources. Ground disturbance has the potential to negatively impact archeological 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

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### 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.