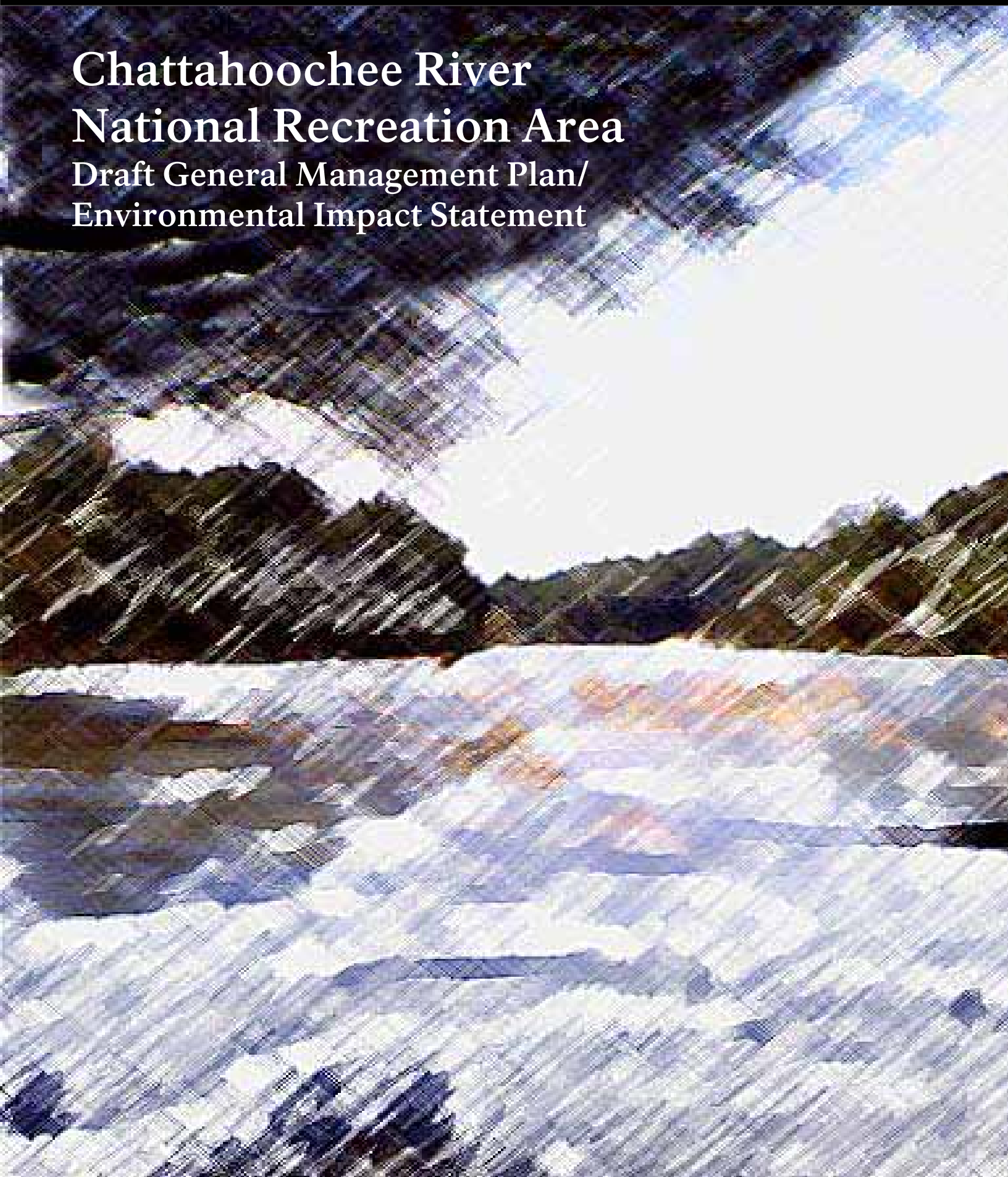
National Park Service
U.S. Department of the Interior

Chattahoochee River
National Recreation Area
Georgia

Chattahoochee River National Recreation Area

Draft General Management Plan/ Environmental Impact Statement



Draft
General Management Plan/ Environmental Impact Statement
Chattahoochee River National Recreation Area

Atlanta, Georgia

United States Department of the Interior
National Park Service

May, 2004

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Chattahoochee River National Recreation Area
Draft General Management Plan and Environmental Impact Statement

CHATTAHOOCHEE RIVER NATIONAL RECREATION AREA

Atlanta, Georgia

This *Draft General Management Plan Amendment/Environmental Impact Statement* evaluates four alternatives for the future management of the Chattahoochee River National Recreation Area. It defines the strategies that will allow for diverse visitor use of the Chattahoochee River National Recreation Area, protect park resources, and provide for the enjoyment of the people. The National Park Service is the lead agency for this project.

The Centralized Access Alternative, the preferred alternative, would draw visitors toward a system of three hubs in which administrative and interpretive facilities would provide visitor information, rest rooms, parking lot and roads, trail heads, and access to the Chattahoochee River. The hubs would provide an opportunity to optimize the visitors' experience and understanding of the park. The visitors' experience would be focused on the interpretive activities and other facilities available while in the hubs, and provide for solitude and natural settings outside the hubs. This alternative would allow the National Park Service to concentrate limited resources in hubs, while maintaining a wide variety of visitor use.

The Focus on Solitude Alternative would minimize development in the park and maximize the opportunity for visitors to experience solitude in natural settings that are relatively insulated from the surrounding urban conditions, particularly in newly acquired areas. This alternative would allow continued use of existing facilities. Some areas subject to active use would continue such use, but with the option to improve resource conditions through various means.

The Expanded Use Alternative would expand and distribute visitor access throughout the park, including newly acquired parcels, and would provide a wide variety of visitor experiences. New facilities would be developed or existing facilities would be refurbished. Connectivity to existing neighborhoods would be optimized and expanded. The National Park Service could provide for a wide variety of visitor experiences and would provide trail linkages to areas outside the park.

The Continue Current Management or No Action Alternative would continue the current management practices into the future. There would be only minor changes in resources management, visitor programs, or facilities beyond regular maintenance activities. The current park road system would be retained, and existing traffic management practices would continue.

The potential environmental consequences are addressed for each alternative, including impacts to natural resources, cultural resources, transportation, and visitor and community values.

National Park Service
Superintendent
1978 Island Ford Parkway
Atlanta, GA 30350- 3400

For further information about this document, write the above address or call: 678- 538- 1200

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EXECUTIVE SUMMARY

OVERVIEW

This general management plan and environmental impact statement is the basic guidance document for managing the Chattahoochee River National Recreation Area. The purposes of this plan are to specify resource conditions and visitor experiences to be achieved in the park and to provide the foundation for decision- making and preparation of more specific resource plans regarding park management.

The final general management plan will be the second comprehensive plan prepared for the Chattahoochee River National Recreation Area by the National Park Service. When completed, it will represent an agreement by the National Park Service with the public on how the park will be used and managed during the plan period. This plan represents the results of a multi- year planning process that began in 1999. It complies with applicable National Park Service planning guidance, including: Management Policies 2001 (NPS 2000c), and *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making* (NPS 2001b). The geographic area covered by this plan includes 10,000 acres of land located along 48 miles of the Chattahoochee River corridor extending from Peachtree Creek in Atlanta north to Buford Dam, Lake Lanier. The area includes the 6,800 acres within the park's boundaries as of 1984 and an additional 3,200 acres designated for the park by Congress in 1999.

Since the 1989 general management plan was prepared, the Atlanta metropolitan area has grown rapidly. The counties that border the Chattahoochee River National Recreation Area (Cobb, Fulton, Forsyth, and Gwinnett) are among the fastest growing in the United States. This rapid development has resulted in industrial, commercial, and housing developments close to the narrow, linear park. Simultaneously, the number and variety of visitor uses have increased dramatically, especially in the past decade. As a result, the updated general management plan must address problems associated with physical encroachment and increased levels and types of visitor use. Three key management issues have been identified for the park.

The first key management issue is to determine the most appropriate levels of service for visitor interpretation and education in the park. Key issues include:

> How can the park accommodate an increasing numbers of visitors and still provide effective infrastructure, such as water and wastewater facilities, roads, and parking areas?
>
> How can the park provide effective educational and interpretive programs for increasing numbers of visitors?

A second key management issue is to determine suitable locations for administration and visitor facilities. Key questions are:

> What are the most appropriate locations to support administration and operations functions while minimizing resource disturbance?
>
> Should these facilities be concentrated in a few locations or spread out over a larger geographical area?
>
> What is the basis for deciding where facilities should be located, and what types should be constructed?

The third key management issue is to determine how to manage the park to allow for quality visitor experiences while protecting natural and cultural resources. The park is located in a long, narrow river corridor surrounded by rapidly developing communities and park is therefore highly sensitive to potential effects of encroachment and use. Key issues include:

> Physical disturbance of soils on construction sites in developing areas immediately around the park can lead to sedimentation of the Chattahoochee River and streams within the park, with resulting adverse impacts on aquatic life and water quality. How can the park deal effectively with non- point pollution and sedimentation?
>
> Water quality in streams within the park, including the Chattahoochee

River, can be adversely impacted by nonpoint runoff from impervious surfaces in adjoining developed areas. Pollutants such as fecal coliform bacteria, trace metals, and organic compounds can be introduced via this mechanism. How can the National Park Service maintain water quality in streams within the park?

Exotic species encroaching from neighboring areas may threaten native species in the park. How can the National Park Service manage the control of exotic species to prevent or minimize the effects to native species?

Encroachment by development can lead to creation of numerous informal, unmaintained (social) trails in the park created by people from adjoining residential areas. Social trails disturb native vegetation and can lead to soil erosion, especially in steeper areas. How can the National Park Service manage trails to prevent or minimize the effects of social trails?

Increased numbers of visitors require water and wastewater infrastructure as well as education and interpretation services. Construction and operation of these types of facilities, along with associated roads and parking areas, can affect and have affected the park's natural habitats and cultural resources. How can the park manage the construction and operation of these facilities to minimize impacts on natural and cultural resources?

The potential solutions to these issues are reflected in the management alternatives analyzed in this general management plan and environmental impact statement. The alternatives address the adequacy and appropriateness of park services and facilities and the challenges posed by managing a large, linear park in the center of a major, rapidly developing metropolitan area.

As with all national parks, management of the Chattahoochee River National Recreation Area is guided by numerous congressional acts, Executive Orders, regulatory requirements, and National Park Service policies. In addition to the approaches contained in the alternatives in this general management plan, the National Park Service strives to implement these legislative, executive, and policy requirements in the park. The "Servicewide Policies and Mandates" section identifies the desired conditions that the National Park Service will work to attain regardless of the alternative that is selected and the types of actions the National Park Service will take to achieve those desired conditions.

Specific resources and values, called impact topics, were used to focus the planning process and the assessment of the consequences of each of four alternatives. Four criteria were used to determine the impact topics. They included resources cited in the establishing legislation for the park or the parkway, resources critical to maintaining the significance and character of the park, resources recognized as important by laws or regulations, and resources of concern to the public, as expressed during scoping. Impact topics were organized into three categories.

Natural resources, including air quality, the Chattahoochee River and its tributaries, wetlands and floodplains, deciduous forests, protected and rare species, and other native wildlife.

Cultural resources, including archeological resources, historic buildings, structures, objects, and properties of traditional religious and cultural significance.

Visitor and community values, including traditional park character and visitor experience, regional and local transportation, and community character.

Decision points were then generated for the park by soliciting comments at six public meetings located throughout the corridor during the fall of 2000 and at meetings with agencies. Decision points are statements that specify a range of possible future conditions in the park, based on public input. The decision points are used as the basis for developing the alternatives in the environmental impact statement for the general management plan. The following decision points were developed.

Should present practices of management, preservation, and protection of natural and cultural resources be maintained, or should these management, preservation, and protection practices be expanded in volume, type, and scope?

Should the park enhance visitor access and use with associated facilities, or should the park restrict use and access to selected areas?

Should the park widen its circle of influence, or should the park restrict its focus to activities within park boundaries?

Four alternatives were developed to provide different approaches for addressing the decision points. To design these alternatives, the National Park Service conducted public scoping, developed the above decision points, and then screened a larger number of alternatives, refining them based on public input. Following the general definition of the alternatives, the National Park Service identified management prescriptions (future uses) potentially applicable for implementing the alternatives. The prescriptions are possible future uses of the park that reflect concerns and issues identified by the public during the scoping process.

Five management prescriptions define the target visitor experiences and resource conditions that could occur under the four alternatives for the Chattahoochee River National Recreation Area. Each alternative is a combination of several management prescriptions. None of the alternatives would use all of the prescriptions, and the locations where some of the prescriptions would be applied vary among alternatives. The prescriptions emphasize desired conditions and visitor experiences for forests, the Chattahoochee River, cultural resources, recreation areas, visitor facilities, and administration and operations areas.

Using a system of zones, the management prescriptions were then mapped to specific areas of the park to define the future uses in the park as defined under the various prescriptions. The following five management zones were developed.

Developed Zone: The developed zone would provide the highest number of recreational and educational facilities for visitors. This zone would be characterized by a relatively high density of people in a relatively urbanized setting. The opportunity for solitude would be low, but the potential for educational opportunities would be high. Appropriate activities would include day hiking, off- road and street biking, horseback riding, jogging, picnicking, natural and cultural resources observation, interpretative activities, fishing, canoeing, rafting, kayaking, and use of motorized vessels. This zone would include facilities such as buildings, roads, parking lots, and paved trails.

Natural Area Recreation Zone: This zone would allow certain types of high- use recreation in a relatively undisturbed natural environment. The number of visitors in this zone would be relatively high, so the opportunity for experiencing solitude would be moderate compared to the urban primitive zone. Unpaved trails would be appropriate in this zone, as well as activities such as off- road bicycling.

Urban Primitive Zone: This zone allows visitors to experience a relatively natural environment and a relatively low probability of encountering many people during a given visit to the park. This zone would provide a relatively undisturbed environment that could be enjoyed by visitors interested in nature and natural settings. Few people would be encountered in this zone, use of non-motorized vessels would be allowed. Unpaved trails would be appropriate.

Pristine River Zone: This zone would provide visitors with an experience as close to a natural undisturbed river corridor as possible, given the urban environment in which the park is located. Trails would not be allowed close to the river; access would be possible by boat via boat ramps located outside this zone. Although the region outside the park continues to be developed, the intent of this zone is to provide a river experience of quiet and solitude to the extent practicable, enabling visitors to appreciate the natural values of the Chattahoochee River environment.

Cultural Resource Zone: This zone would protect cultural resources within the park, while allowing the public to enjoy and un-

derstand the value of these resources. The number of visitors to cultural resource zones could be high, depending on the type of resource. Opportunity for solitude and enjoyment of the natural environment would vary according to location. This zone would be a clearly defined area that includes archeological or historic resources. This zone could include individual sites already listed on the National Register of Historic Places or, in the future, could include formally designated cultural landscapes.

DESCRIPTIONS OF ALTERNATIVES

Guidelines for preparing environmental impact statements require that the preferred alternative be identified in the draft environmental impact statement unless the decision- maker has no preference. The National Park Service would find any of the three action alternatives acceptable as the basic approach for future management of the Chattahoochee River National Recreation Area. However, the National Park Service has identified the Centralized Access Alternative as the preferred alternative. The following is a summary of the key features of each of the alternatives.

Continue Current Management or No Action Alternative

This alternative would continue the current management pattern into the future. It represents the No Action Alternative required by the Council on Environmental Quality (1978) guidelines for implementing the National Environmental Policy Act and *Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision Making* (NPS 2001b).

Under the No Action Alternative, the park would be maintained and managed using the current management strategy. There would be no major changes in resources management, visitor programs, or facilities beyond regular maintenance. The current park road system would be retained, and existing traffic management would continue.

Focus on Solitude Alternative

This alternative would implement management programs to minimize development in the park and maximize the opportunity for visitors to experience solitude in natural settings relatively insulated from the surrounding urban conditions, particularly in newly acquired areas. This approach would involve reducing or minimizing recreational sites and facilities within the newly acquired areas of the park, but would allow continued use of existing facilities in the original units. Some areas subject to heavy use would continue such use, with the option to improve conditions through various means; for example, by changing visitor use patterns to mitigate potentially adverse impacts on natural and cultural resources. The focus on solitude would redirect visitation initiatives to provide experiences in a relatively natural area with few visitors. This alternative would have the following specific features:

Visitors would experience the natural environment wherever feasible through a system of non- paved walking trails, primitive areas of beauty, and locations along the riverbanks defined as pristine river zones where no trails or structures would be allowed near the river. Areas designated as pristine river zones could be viewed from the river in non- motorized vessels.

This alternative would allow few new facilities to be constructed within park boundaries; the majority of new facilities would be built outside the park. Newly acquired additions, as authorized by Congress along the Chattahoochee River corridor, would remain in the more natural state, with unpaved trails only. River use would be encouraged through canoes, rafts, non- gas motorized vessels, and other recreation opportunities. No new paved roads would be built under this alternative.

Visitors would be provided with a quality experience in a wide variety of environments available in the park, with an emphasis on environmental education. The visitor experience would be highly facilitated through learning.

Parcels added to the park under the newly expanded boundaries would remain in, or be restored to, a largely natural state. Areas with significant cultural resources would be managed to protect values in accordance with National Register standards. Limited facilities would be added; for example, small gravel parking lots, primitive trails, and interpretive signage.

Centralized Access Alternative – The Preferred Alternative

In this alternative, visitors would be drawn toward a system of relatively developed hubs in which administrative and interpretive facilities are located. Hubs, at a minimum, would provide visitor information, rest rooms, parking lot and roads, trail head, and access to the river; such facilities would be minimized outside hubs. The hubs would be placed at strategic locations along the 48- mile-long park to optimize visitors' experience and understanding of the park. This alternative would have the following features:

Visitors' experience would be focused on the interpretive activities and other facilities available in the hubs. Visitors, in lower numbers, could enjoy the extensive natural habitats and cultural resources in the undeveloped portions of the park. Visitor activities in natural areas outside the hubs would be focused on achieving solitude in an urban environment.

Visitor services would be expanded while simultaneously maintaining green space throughout the park by coordinating public/private partnerships at carefully selected centers (hubs) of the park.

The opportunity for instituting National Park Service education and interpretive programs, visitor services, and connectivity at key regional locations would be enhanced. This alternative would allow the National Park Service to concentrate limited resources into hub areas. This alternative would discourage expanded new entrances to the park and would encourage National Park Service supervision, education, and monitoring where use is greatest.

The visitor experience would be more gregarious, with more opportunity for socializing and involvement in group activities and less opportunity for solitude in the vicinity of the hubs. However, the opportunity for solitude would still exist at park locations outside the hubs. A nine- mile pristine river zone would be established between McGinnis Ferry Road and Highway 20 that would provide visitors with the opportunity to experience the river in a relatively natural condition.

Motor vessels (gasoline- driven motors) would be defined as an appropriate use in the upper portion of Bull Sluice Lake. Bull Sluice Lake is the only lake within the 48- mile park, providing a unique recreation opportunity for the use of motorized vessels.

Expanded Use Alternative

In this alternative, expanding and distributing access throughout the park, including newly acquired parcels, would provide varying visitor experiences. New facilities would be developed or existing facilities would be refurbished. Connectivity to existing neighborhoods would be optimized, providing similar visitor experiences throughout the park. This alternative would have the following specific features:

Because this linear park is located adjacent to the most densely developed neighborhoods and business communities of the metropolitan area, access to the park could be expanded in the future for current and new visitors.

The National Park Service could expand visitor experiences to local visitors and day use visitors from business parks and neighborhoods and would provide trail linkages to city- and county- funded and supervised parks.

Trails from existing and proposed developments would be managed to encourage use by an expanded group of visitors. This would require a higher level of self- help and individual reliance from a wide range of sources.

A proactive National Park Service outreach program would de- emphasize solitude and

emphasize a more social, community- based group experience. Expanding uses and access would require a redefinition of gathering spaces surrounding the national park, which would be used for picnics, celebrations, neighborhood meetings, and family walks. Visitor experience would be characterized as one of convenience and personal attachment.

Facilities for the park would be necessarily distributed throughout the 48 miles, based on availability of resources and local community support to serve a greater and more diverse population of residents. This alternative would have the potential to strengthen community involvement in environmental protection of the park and its resources. Local self- help education and voluntary public/private partnerships could enhance park stewardship.

ENVIRONMENTAL CONSEQUENCES

The environmental consequences section describes the effects of the alternative on each of the 10 impact topics.

The process of determining environmental consequences included identifying the regulations and policies applicable to each impact topic, and then defining the methods to conduct the analysis. This included defining impact intensities such as negligible, minor, moderate, or major effects for each impact topic; determining whether the effects were adverse or beneficial; and establishing time frames for long- term and short- term effects. The impacts associated with the construction and operation phases of each alternative were also defined. Cumualtive effects of park action inside the park on park resources and visitor experience, as well as cumulative effects of actions in the local and regional area surrounding the park on park resources, were also assessed. The impact analysis compared future conditions under potential new types of management practices (action alternatives) to future conditions that would occur if current management practices were to continue unchanged (Continue Current Management / No Action Alternative). The following is a summary of the results of the environmental impact assessment:

Impacts of the No Action Alternative: Overall, the No Action Alternative provides a baseline against which the effects of the action alternatives can be evaluated. Under the No Action Alternative, present management practices, resource conditions/trends, and the current visitor experiences/trends would continue into the future. In addition, under the No Action Alternative, the park's boundaries would not be increased to 10,000 acres. The No Action Alternative would thus essentially continue the existing conditions and management practices in the park. Because park staff resources are limited, visitor education would be minimal. The park is currently experiencing problems with soil erosion, sedimentation of streams from surrounding development, excessive growth of invasive species of plants, and excessive use of social trails (trails not constructed and maintained by National Park Service but created by visitors). In addition, cultural resources are being degraded through physical disturbance. Impairmanet of cultural resources is therefore possible under the No Action Alternative. In this sense, the park is not in compliance with all applicable National Park Service policies, mandates, and regulations. Implementation of the No Action Alternative would result in a continuation of these problems and of non- compliance in some instances.

Limited construction and continued maintenance would occur under the No Action Alternative. The park would continue to repair and maintain roads, boat ramps, trails, parking lots, and buildings at current levels. Some new facilities would be constructed and operated in the park, however.

The overall effects of the No Action Alternative on natural resources would lead to gradual long- term reduction of the value of natural and cultural resources in the park, as a result of less effective resource and trail management in comparison with the action alternatives. However, National Environmental Policy Act environmental assessments would still be required for the majority of new park facilities, and this would provide assurance that avoidance of potentially adverse direct

and cumulative impacts would be achieved to the maximum extent possible.

Impacts of the Focus on Solitude Alternative: Approximately 69 percent of the park (6,900 acres of the total 10,000 acres) would be left in a more natural state as urban primitive and pristine river zones. Slightly more than 2.7 percent of the park (276 acres) would be included in developed zones. However, the primary visitor experience would be focused on achieving solitude and isolation. Approximately 32 percent of the park (3,200 acres) would be designated as developed, natural area recreation, and cultural resource zones.

Increased educational and research opportunities would occur compared to the No Action Alternative. The Focus on Solitude Alternative would focus on providing visitors the maximum amount of opportunity to experience the natural features of the park, but with relatively few access points along the 48- mile corridor. Construction would be more limited under this alternative than the No Action Alternative, and would still be completed according to the requirements of the National Environmental Policy Act and National Park Service policies.

Effects of construction and operation of new facilities would be of lower intensity as compared with the No Action Alternative because the overall level of construction activity would be less than the No Action Alternative, and because resource management plans, commercial services plans, and trail plans would be prepared and implemented.

Impacts of the Preferred Alternative – Centralized Access: Approximately 40 percent of the park (4,000 acres of the total 10,000 acres) would be available to visitors through the developed, natural area recreation, and cultural resource zones. Five developed zoneswould be allowed under this alternative, totaling approximately 2.7 percent of the total park area (272 acres). However, the actual amount of disturbed land within the developed zone would be much smaller, since only a fraction of each zone would actually be physically disturbed. This same principle applies to construction activities in any of the other zones. In addition, National Environmental Policy Act environmental assessments would still be required for the majority of new park facilities, and this would provide assurance that avoidance of potentially adverse direct and cumulative impacts was achieved to the maximum extent possible. These environmental assessments would be tiered to the general management plan/environmental impact statement as a means of assuring that all issues identified by the public during scoping are addressed effectively.

Under this alternative, visitors would be drawn to a maximum of up to three hubs and five developed zones distributed along the length of the 48- mile park corridor. Trails would also be constructed in certain areas. Hubs and trails, as well as any other new park facilities, would be sited according to the avoidance, minimization, and compensation sequencing requirements of the National Environmental Policy Act and the non-impairment policy of the National Park Service. This could involve use of innovative approaches, such as locating hubs outside park boundaries or joint use of adjoining, existing facilities.

This alternative would allow increased educational opportunities for visitors through centralized facilities and access to resources and information from park rangers. Visitors would still have ample opportunity to experience solitude and other similar activities in natural areas between the hubs. An intermediate level of construction would occur in the hubs and for trail systems or other National Park Service facilities, in comparison with the No Action Alternative.

In general, relative effects of this alternative on the environment would therefore be moderate in comparison to the No Action Alternativee. The general effects of this alternative as a result of construction would be greater than the No Action alternative because some new construction would take place in the hubs and developed zones. However, the long- term effects of the Centralized Access Alternative would be beneficial, because it would include planning for and ef-

fective management of various natural and cultural resources, commercial services, and trail management. The No Action Alternative would not develop or implement these plans.

Impacts of the Expanded Use Alternative: Approximately 85 percent (8,500 acres of the total 10,000 acres) of the park would be available to visitors through the developed, natural area recreation, and cultural resource zones. However, visitor use would be focused and concentrated on a variety of access points and a total of eleven developed zones distributed throughout the park. Numerous types of facilities would be constructed and operated within these developed zones, such as boat access points, trail heads, and interpretive facilities. Trails would be constructed in a greater number of areas than under the other alternatives, with approximately 74 percent of the park (7,400 acres) designated as natural area recreation zone. Because visitor use would be concentrated in the developed zones, however, visitors would still be able to utilize the extensive areas between these zones for less structured activities.

Access points and trails, and any other new park facilities would be sited according to the avoidance, minimization and compensation sequencing requirements of the National Environmental Policy Act. Development would be limited as a result, and sites where construction would be proposed would be carefully selected and managed to avoid adverse effects of soil erosion and habitat disturbance. Implementation of this alternative could also involve use of innovative approaches such as locating facilities outside park boundaries, or joint use of adjoining, existing facilities.

This alternative would have the highest relative degree of impact on the environment compared to the No Action Alternative. However, the park would benefit from the development and implementation of resource management plans, commercial services plans, and trail plans. These plans would be designed to protect and restore natural and cultural resources in the park.

All three action alternatives would have a major beneficial long- term impact on community and visitor values as a result of the improved education and interpretation facilities. Compared to the No Action Alternative, these would provide greater opportunities for the public to learn about and experience the park's natural and cultural resources. The action alternatives would also enhance the efficiency of park administration and improve monitoring and other protective services provided by park rangers.

None of the action alternatives would result in impairment of natural or cultural resources or transportation. All action alternatives would include development and implementation of a resource management plan, a water resource management plan, a fisheries management plan, a collections management plan, a commercial services plan, fire management plan, and an integrated trails system plan. These plans would provide effective means for balancing the desired forms of use of the park by visitors while allowing for preservation and protection of park natural and cultural resources.

The vast majority of the effects of the action alternatives would not result in major, adverse long-term effects on the cultural or natural resources of the park. The Focus on Solitude Alternative would result in a major, long- term, adverse effect on visitors who desire more active forms of recreation in the park because this alternative would pose the most restrictions on these types of use. This alternative would have a major beneficial effect on visitors who valued a less active and more nature-oriented experience within the park, however. The Expanded Use Alternative was also estimated to result in major adverse long- term effects on transportation at six locations in the park. However, detailed site- specific transportation analyses would be conducted as part of tiered environmental assessments for future proposed projects and measures to minimize or reduce impacts would be developed. As part of these environmental assessments, possible site- specific traffic solutions such as traffic calming measures or altered flow patterns at park access points would be identified. This would result in improved localized conditions, which would be considered moderate, beneficial, long- term effects on transportations systems associated with the park. The overall adverse impacts of the Expanded Use Alternative on trans-

portation are defined as being moderate and long-term as a result of these factors.

Major, long- term, adverse effects were predicted to result from the continued cumulative effects of development around the narrow, linear park, but these are outside the direct control of park management. The primary effects of development in areas surrounding the park include excessive storm water runoff and associated effects on surface water hydrology, water quality, and aquatic resources, physical encroachment, spread of exotic species, and high levels of visitor use on informal trails. These cumulative effects are not the result of management actions taken at the park, but do present an opportunity for development of outreach and partnership programs designed to address these issues.

MITIGATION MEASURES OF THE ACTION ALTERNATIVES

Mitigation and best management practices were included throughout the formulation of the alternatives included in this general management plan. Measures taken to protect natural resources include siting new facilities in disturbed areas whenever feasible to avoid causing new effects on resources. Boardwalks, fences, signs, and similar measures would route people away from sensitive resources, such as wetlands or riparian habitats, while permitting access to important viewpoints. Wetland and sensitive riparian habitats would be delineated by qualified specialists and clearly marked before construction work proceeded.

Mitigation actions would also occur prior to construction to minimize immediate and long- term effects to rare, threatened, and endangered species, wetlands, and terrestrial ecological resources. Adverse effects to cultural resources would be minimized by applying the Secretary of the Interior's Standards for Archeology and Historic Preservation and by using visual screens and/or sensitive designs compatible with historic resources. In addition, all action alternatives would include development and implementation of a resource management plan, a water resource management plan, a fisheries management plan, a collections management plan, a commercial services plan, a fire management plan, and an integrated trails system plan, which would significantly mitigate adverse effects on park resources.

SELECTING THE PREFERRED ALTERNATIVE

A choosing by advantages workshop was held to select a preferred alternative. The choosing by advantages method provides a trackable, objective, logical procedure for assigning numerical scores that show the relative advantage of alternatives. The National Park Service uses this method to allow a non- biased selection of the preferred alternative from a set of initial draft alternatives.

Using this method, the advantages of the three draft alternatives were scored and compared; the alternative with the highest score was determined to be the preferred alternative. The preferred alternative was then further analyzed to incorporate additional advantageous features from the other two draft alternatives, thereby raising the score of the preferred alternative while achieving the highest degree of advantage. The workshop identified the Centralized Access Alternative as the preferred alternative.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

By reviewing potential effects on resources and effects of visitor use, and developing proposed measures for mitigating effects on natural and cultural resources, the National Park Service has determined that the environmental preferable alternative is the Centralized Access Alternative. While some specific actions under the Focus on Solitude Alternative may achieve similar, or in some cases greater, levels of protection for certain cultural resources and natural resources compared to the Centralized Access Alternative, the Centralized Access Alternative best achieves the six conditions prescribed under the National Environmental Policy Act Section 101. While many actions in other alternatives may be similar to the environmentally preferred alternative in their effect and consequence, the Centralized Access Alternative:

> Provides a high level of protection of natural and cultural resources while concurrently attaining the widest range of neutral and benefi-

cial uses of the environment without degradation;

Maintains an environment that supports diversity and variety of individual choice; and

Integrates resource protection with opportunities for an appropriate range of visitor uses.

CONTENTS

Executive Summary

Purpose of and Need for Action

Purpose Of The General Management Plan 3
Need For The General Management Plan 10
- Park History And Use Relative To Management Planning 11
- Geographic Area Covered By The General Management Plan 13
- Planning Direction Or Guidance 13
  - Park Mission 13
  - Mission Goals 15
  - Special Mandates And Administrative Commitments 15
  - Servicewide Mandates And Policies 15
- Planning Opportunities And Issues 23
  - Decision Points 23
  - Impact Topics - Resources And Values At Stake In The Planning Process 24
  - Issues Topics Considered but Dismissed 26

Alternatives

Potential Management Prescriptions 33
- Developed Zone 33
  - Visitor Experience 39
  - Resource Condition Or Character 39
  - Appropriate Kinds Of Activities Or Facilities 39
- Natural Area Recreation Zone 39
  - Visitor Experience 39
  - Resource Condition Or Character 39
  - Appropriate Kinds Of Activities Or Facilities 39
- Urban Primitive Zone 40
  - Visitor Experience 40
  - Resource Condition Or Character 40
  - Appropriate Kinds Of Activities Or Facilities 40
- Pristine River Zone 40
  - Visitor Experience 40
  - Resource Condition Or Character 40
  - Appropriate Kinds Of Activities Or Facilities 41
- Cultural Resource Zone 41
  - Visitor Experience 41
  - Resource Condition Or Character 41
  - Appropriate Kinds Of Activities Or Facilities 41

Formulation Of Alternatives 42
- Continue Current Management or No Action Alternative 43
- Focus On Solitude Alternative 43
- Centralized Access - The Preferred Alternative 44
- Expanded Use Alternative 52

CONTENTS (CONTINUED)

Comparative Cost Analysis 52
Capital Costs 55
Operating Costs 55
Costs For Staffing 55
Costs Comparison 56
Mitigation Measures of the Action Alternative 57
Selecting The Preferred Alternative 65
Environmentally Preferred Alternative 66
Summary of Environmental Consequences 67

Affected Environment

Natural Resources 89
Air Quality 89
Water Resources 91
Surface Water Hydrology and Watershed Characteristics 91
Water Supply 93
Water Quality 94
Aquatic Resources 100
Wetlands and Floodplains 104
Rare, Threatened or Endangered Species 106
Terrestrial Ecological Resources 107
Prime and Unique Farmlands 115
Cultural Resources 116
Archeological Resources 118
Historic Resources 119
Regional Transportation Conditions 120
Transportation Conditions in Relation to the Park 121
Park Transportation Conditions 122
Visitor and Community Values 123
Traditional Park Character and Visitor Experience 123
Community Characteristics 129
Population 129
Land Use 129
Economics 131

Environmental Consequences

Impact Assessment Methodology 135
How the Impact Assessment Section Is Organized 146

CONTENTS (CONTINUED)

Environmental Impacts of the Continue Current Management or No Action Alternative 147
Impacts of the No Action Alternative on Natural Resources 147
Impact of the No Action Alternative on Air Quality 147
- Regulations and Policy 147
- Methodology 147
- Analysis 148
- Cumulative Impacts 148
- Conclusions 149

Impacts of the No Action Alternative on Water Resources 149
- Regulations and Policy 149
- Methodology 149
- Analysis 150
- Cumulative Impacts on Water Resources 151
- Conclusions 152

Impacts of the No Action Alternative on Wetlands and Floodplains 152
- Regulations and Policy 152
- Methodology 152
- Analysis 153
- Cumulative Impacts on Wetlands and Floodplains 154
- Conclusions 154

Impacts of the No Action Alternative on Rare, Threatened and Endangered Species 154
- Regulations and Policy 154
- Methodology 154
- Analysis 156
- Cumulative Impacts on Rare, Threatened and Endangered Species 156
- Conclusions 157

Impacts of the No Action Alternative on Terrestrial Ecological Resources 157
- Regulations and Policy 157
- Methodology 157
- Analysis 159
- Cumulative Impacts on Terrestrial Ecological Resources 160
- Conclusions 160

Impact of the No Action Alternative on Prime and Unique Farmland 160
- Regulations and Policy 160
- Methodology 160
- Analysis 160
- Cumulative Impacts on Prime and Unique Farmlands 162
- Conclusions 162

Impacts of the No Action Alternative on Cultural Resources 162

CONTENTS (CONTINUED)

Impacts of the No Action Alternative on Archeological Resources 162
- Regulations and Policy 162
- Methodology 162
- Analysis 163
- Cumulative Impacts 164
- Conclusions 164

Impacts of the No Action Alternative on Historic Buildings, Structures, Objects, and Landscapes 165
- Regulations and Policy 165
- Methodology 165
- Analysis 165
- Cumulative Impacts 166
- Conclusions 166

Impacts of the No Action Alternative On Transportation 166
- Regulations and Policy 166
- Methodology 166
- Analysis 168
- Cumulative Impacts 172
- Conclusions 172

Impacts of the No Action Alternative On Visitor And Community Values 173
- Regulations and Policy 173
- Methodology 173
- Analysis 176
- Cumulative Impacts 178
- Conclusions 179

Sustainability and Long- Term Management 179
Environmental Impacts of The Focus On Solitude Alternative 180
Impacts of the Focus On Solitude Alternative On Natural Resources 180
Impacts of the Focus On Solitude Alternative On Air Quality 180
- Regulations and Policy 180
- Analysis 180
- Cumulative Impacts 181
- Conclusions 181

Impacts of the Focus On Solitude Alternative On Water Resources 181
- Regulations and Policy 181
- Analysis 181
- Cumulative Impacts on Water Resources 181
- Conclusions 182

Impacts of the Focus On Solitude Alternative On Wetlands and Floodplains 183
- Regulations and Policy 183

CONTENTS (CONTINUED)

Analysis 183
Cumulative Impacts on Wetlands and Floodplains 183
Conclusions 184
Impacts of the Focus On Solitude Alternative on Rare, Threatened and Endangered Species 184
Regulations and Policy 184
Analysis 184
Cumulative Impacts on Rare, Threatened and Endangered Species 184
Conclusions 185
Impacts of the Focus On Solitude Alternative on Terrestrial Ecological Resources 185
Regulations and Policy 185
Analysis 185
Cumulative Impacts on Terrestrial Ecological Resources 186
Conclusions 186
Impacts of the Focus On Solitude Alternative on Prime and Unique Farmlands 186
Regulations and Policy 186
Analysis 186
Cumulative Impacts on Prime and Unique Farmlands 187
Conclusions 187
Impacts of the Focus On Solitude Alternative On Cultural Resources 187
Impacts of the Focus On Solitude Alternative on Archeological Resources 187
Regulations and Policy 187
Analysis 187
Cumulative Impacts 188
Conclusions 189
Impacts of the Focus On Solitude Alternative on Historic Buildings, Structures, and Objects 189
Regulations and Policy 189
Analysis 190
Cumulative Impacts 190
Conclusions 190
Impacts of the Focus On Solitude Alternative On Transportation 191
Regulations and Policy 191
Analysis 191
Cumulative Impacts 192
Conclusions 192
Impacts of the Focus On Solitude Alternative On Visitor And Community Values 193
Regulations and Policy 193
Analysis 193
Cumulative Impacts 194

CONTENTS (CONTINUED)

Conclusions 195
Sustainability and Long- Term Management 195
Environmental Impacts of the Centralized Access Alternative 197
Impacts of the Centralized Access Alternative On natural Resources 197
Impacts of the Centralized Access Alternative on Air Quality 197
Regulations and Policy 197
Analysis 197
Cumulative Impacts 197
Conclusions 197
Impacts of the Centralized Access Alternative on Water Resources 198
Regulations and Policy 198
Analysis 198
Cumulative Impacts on Water Resources 198
Conclusions 199
Impacts of the Centralized Access Alternative on Wetlands and Floodplains 199
Regulations and Policy 199
Analysis 199
Cumulative Impacts on Wetlands and Floodplains 200
Conclusions 200
Impacts of the Centralized Access Alternative on Rare, Threatened and Endangered Species 201
Regulations and Policy 201
Analysis 201
Cumulative Impacts on Rare, Threatened and Endangered Species 201
Conclusions 202
Impacts of the Centralized Access Alternative on Terrestrial Ecological Resources 202
Regulations and Policy 202
Analysis 202
Cumulative Impacts on Terrestrial Ecological Resources 203
Conclusions 203
Impacts of the Centralized Access Alternative on Prime and Unique Farmlands 203
Regulations and Policy 203
Analysis 203
Cumulative Impacts on Prime and Unique Farmlands 204
Conclusions 204
Impacts of the Centralized Access Alternative on Cultural Resources 204
Impacts of the Centralized Access Alternative on Archeological Resources 204
Regulations and Policy 204
Analysis 204
Cumulative Impacts 205

CONTENTS (CONTINUED)

Conclusions 206
Impacts of the Centralized Access Alternative on Historic Buildings, Structures, and Objects 206
Regulations and Policy 206
Analysis 206
Cumulative Impacts 207
Conclusions 207
Impacts of the Centralized Access Alternative on Transportation 208
Regulations and Policy 208
Analysis 208
Cumulative Impacts 209
Conclusions 210
Impacts of the Centralized Access Alternative on Visitor and Community Values 210
Regulations and Policy 210
Analysis 210
Cumulative Impacts 212
Conclusions 213
Sustainability and Long- Term Management 213
Environmental Impacts of The Expanded Use Alternative 215
Impacts of the Expanded Use Alternative On Natural Resources 215
Impacts of the Expanded Use Alternative on Air Quality 215
Regulations and Policy 215
Analysis 215
Cumulative Impacts 215
Conclusions 216
Impacts of the Expanded Use Alternative on Water Resources 216
Regulations and Policy 216
Analysis 216
Cumulative Impacts on Water Resources 216
Conclusions 217
Impacts of the Expanded Use Alternative on Wetlands and Floodplains 218
Regulations and Policy 218
Analysis 218
Cumulative Impacts on Wetlands and Floodplains 218
Conclusions 219
Impacts of the Expanded Use Alternative on Rare, Threatened and Endangered Species 219
Regulations and Policy 219
Analysis 219

CONTENTS (CONTINUED)

Cumulative Impacts on Rare, Threatened and Endangered Species 220
Conclusions 220
Impacts of the Expanded Use Alternative on Terrestrial Ecological Resources 220
Regulations and Policy 220
Analysis 220
Cumulative Impacts on Terrestrial Ecological Resources 221
Conclusions 221
Impacts of the Expanded Use Alternative on Prime and Unique Farmlands 222
Regulations and Policy 222
Analysis 222
Cumulative Impacts on Prime and Unique Farmlands 222
Conclusions 222
Impacts of the Expanded Use Alternative on Cultural Resources 223
Impacts of the Expanded Use Alternative on Archeological Resources 223
Regulations and Policy 223
Analysis 223
Cumulative Impacts 224
Conclusions 224
Impacts of the Expanded Use Alternative on Historic Buildings, Structures, and Objects 225
Regulations and Policy 225
Analysis 225
Cumulative Impacts 225
Conclusions 226
Impacts of the Expanded Use Alternative on Transportation 227
Regulations and Policy 227
Analysis 227
Cumulative Impacts 228
Conclusions 228
Impacts of the Expanded Use Alternative on Visitor And Community Values 229
Regulations and Policy 229
Analysis 229
Cumulative Impacts 231
Conclusions 232
Sustainability and Long- Term Management 232

CONTENTS (CONTINUED)

Recommendations for Future Planning Efforts

Cultural Resources 235
Natural Resources 235
Fisheries Management 235
Integrated Trail System Plan 236
Commercial Services Plan 236
Partnering 236
Boundary Expansion Feasibility Study 236
Tracking Cumulative Effects 237

Consultation and Coordination

History of Public Involvement 239
List of Preparers 240
List of Recipients 240

Bibliography, Glossary of Terms, and Appendices

Bibliography 240
Glossary of Terms 251
Appendix A: List Of Relevant Legislation 257
Appendix B: Park- Specific Special Mandates and Commitments 263
Appendix C: Issues Analysis 275
Appendix D: Park Legislation 307
Appendix E: Issue Filtering Table 319
Appendix F: Agency Coordination 325
Appendix G: Summary of Transportation and Other Major Improvement Projects 349
Appendix H: List of Recipients 355

List of Figures

Regional Map 4
Vicinity Map 5
Previous Conditions Map 7
Water Features 9
Continue Current Management/No Action Alternative 45
Focus on Solitude Alternative 47
Centralized Access - Preferred Alternative 49
Expanded Use Alternative 53
Summary of Public Comments Received During Scoping 124

CONTENTS (CONTINUED)

List of Tables

1 Summary of Chattahoochee River National Recreation Area Management Prescriptions 34
2 Grand Total Cost per Alternative 56
3 Summary of Comparative Costs 57
4 Summary of Mitigation Measures Associated With the Alternatives 58
5 Summary of Impacts of the Alternatives 68
6 National Ambient Air Quality Standards and Maximum Monitored Ambient Concentrations in Atlanta for 1995- 1999 90
7 Named Creeks Within the Chattahoochee River Nationbal Recreation Area (With Watershed area in square miles for Dominant Water Bodies) 91
8 Streams in the Park that do not Meet Their Designated Uses Because of High Levels of Metals 97
9 Number of Acres of Lawns Estimated to be Treated with Pesticides in the Vicinity of the Park 99
10 Index of Biological Integrity Scores for Tributary Streams in the Park 103
11 Summary of Acreages and Percentages of Each National Wetland Inventory Wetland Type that Occurs in the Park 105
12 Georgia Natural Heritage Program Protected Species Known to Occur Within the Park or Within ½ Mile of the Park 108
13 United States Fish and Wildlife Service Protected Species that are Known to Occur in the Four- County Area Surrounding the Park or Within the Park 113
14 Main Street/Highway Access Points for the Park and Associated Areas 121
15 Summary of Issues Raised by the Public During Scoping 124
16 Principal Recreational Amenities Summarized According to Park Unit 126
17 Annual Visitation 1991 – 2000 127
18 Population Growth in the Metropolitan Atlanta Area From 1990 to 2000 130
19 Primary Features of Each alternative and Percentage of Total 10,000 Acre Park in Each Zone 137
20 Impact Thresholds for Air Quality 148
21 Impact Thresholds for Surface Water Quality 150
22 Impact Thresholds for Wetlands and Floodplains 152
23 Impact Thresholds forRare, Threatened and Endangered Species 155
24 Impact Thresholds for Terrestrial Ecological Resources, Deciduous Forests 158
25 Impact Thresholds for Terrestrial Ecological Resources, Other Wildlife 158
26 Impact Thresholds for Prime And Unique Farmlands 161
27 Impact Thresholds for Archeological Resources 163
28 Impact Thresholds for Cultural Resources, Historic Buildings, Structures and Objects 165
29 Impact Thresholds for Local and Regional Transportaiton 166
30 Transportation Related Impacts (Based on Data Available as of Fall 2001) 169
31 Impact Thresholds for Visitors and Community Values – Recreational Opportunity 174
32 Impact Thresholds for Visitors and Community Values – Visitor Experience 174
33 Impact Thresholds for Visitors and Community Values – Number and Types of Visitor Facilities 175
34 Impact Thresholds for Visitors and Community Values – Traditional Character 176