

**FINAL DRAFT**

Avian Conservation Implementation Plan  
Chattahoochee River National  
Recreation Area

National Park Service  
Southeast Region



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In cooperation with

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## TABLE OF CONTENTS

Introduction.....	3
Background .....	3
The North American Bird Conservation Initiative .....	4
The Southeastern Bird Conservation Initiative: National Park Service .....	4
Role of NPS in Avian Conservation.....	5
Park Description .....	7
Avian Resources of the Southern Piedmont .....	9
Avian Conservation in CHAT.....	12
Park Identified Needs for Avian Conservation.....	14
Coordination with Regional Conservation Initiatives .....	14
North American Bird Conservation Initiative .....	14
North American Waterfowl Management Plan.....	14
Partners In Flight .....	16
United States Shorebird Conservation Plan .....	16
Waterbird Conservation for the Americas.....	16
Integration of NABCI Goals and Objectives into Park Planning and Operations: NABCI Implementation	
Recommendations .....	16
Inventory .....	17
Monitoring .....	18
Habitat Restoration .....	18
Threat Management.....	20
Research .....	21
Compliance .....	21
Outreach .....	22
Partners and Partnerships .....	22
Funding Opportunities .....	23
Contacts.....	26
Literature Cited.....	28
Appendixes	
Southern Piedmont Partners in Flight Bird Conservation Plan: Avifaunal Analysis	
Southern Piedmont Partners in Flight Bird Conservation Plan: Habitats and Objectives	
Southeast U.S. Waterbird Conservation Plan Species Priorities based on Action Level	
Protected Bird Species in Georgia	
US Fish and Wildlife Service Species of Conservation Concern (2002) in the Piedmont (BCR29)	

## Introduction

This Avian Conservation Implementation Plan (ACIP) is provided to the staff at Chattahoochee National Recreation Area (CHAT) to help identify and prioritize bird conservation opportunities, and to provide information and guidance for the successful implementation of needed conservation activities. This plan may identify goals, strategies, partnerships, and perhaps specific projects allowing the park to participate in existing bird conservation planning and implementation efforts associated with the North American Bird Conservation Initiative (NABCI). Under the auspice of NABCI, appropriate bird and habitat conservation goals may be recommended as identified in the appropriate existing national or regional bird conservation efforts aligned with this initiative: Partners In Flight (PIF), North American Waterfowl Management Plan (NAWMP), US Shorebird Conservation Plan (USSCP), and Waterbird Conservation for the Americas (WCA). For example, parks in the Appalachians will have few if any high priority waterbird conservation issues at a regional landscape or greater scale. As such, little information regarding waterbird conservation will be presented in the ACIP, unless there is an identified park need for this species group, or other mandates, such as federal laws. Similarly, because CHAT is primarily riparian and lowland habitats, conservation recommendations will be provided in the ACIP for landbird and waterbird and their habitats and will be derived from the appropriate PIF bird conservation plan and Southeast Waterbird Conservation Plan. However, all high priority bird conservation issues for CHAT will be discussed and integrated as appropriate.

Information and data presented in the ACIP have been obtained from several sources: 1) interviews with CHAT staff 2) CHAT bird conservation partners 3) the PIF Southern Piedmont Bird Conservation Plan (Cooper 2000), the Southeast Waterbird Conservation Plan (unpublished), 4) peer reviewed bird conservation and management literature, 5) NPS databases, and 6) personal communications with bird conservation specialists throughout North America, especially in the southeastern United States. This plan has been reviewed by CHAT resource management staff and managers, Southeast Coast Inventory and Monitoring Network (SEC I&M) staff, and bird conservation partners and approved by CHAT management. Optimally, this plan will be incorporated into the park's Resource Management Plan and updated annually to reflect completed projects, newly identified needs, and shifts in bird conservation priorities in the region.

**CHAT is not obligated to undertake any of the proposed actions in this plan. The plan is provided to offer guidance to CHAT to voluntarily support important park, regional, and perhaps national and international bird conservation projects for which CHAT is a primary participant in the proposed actions.**

## Background

During the past thirty years, monitoring programs across North America have documented declines of certain bird species populations and their habitats, often severe (Sauer et al. 2000). The decline has caused great concern among scientists, biologists, biodiversity proponents, ecologists, land managers, etc., and the bird conservation

community in general. Birds are recognized as critical components of local and global genetic, species, and population diversity, providing important and often critical ecological, social, economic, and cultural values. Their overall decline has stimulated a worldwide focus on conservation efforts, and North American interest in bird conservation is rapidly becoming a focus of government, non-government, industry, and private interests and expenditures. Many state, federal, and non-governmental wildlife agencies and organizations (NGO's) have recognized this alarming bird decline trend and have joined forces in several extensive partnerships to address the conservation needs of various bird groups and their habitats. The primary initiatives are:

- North American Waterfowl Management Plan
- Partners in Flight
- U.S. Shorebird Conservation Plan
- Waterbird Conservation for the Americas

**The North American Bird Conservation Initiative:** While efforts associated with these plans have generated some successes, it has been increasingly recognized that the overlapping conservation interests of these initiatives can be better served through more integrated planning and delivery of bird conservation. The *North American Bird Conservation Initiative (NABCI; <http://www.nabci-us.org/main2.html>)* arose out of this realization. The vision of NABCI is simply to see ***“populations and habitats of North America’s birds protected, restored and enhanced through coordinated efforts at international, national, regional, state and local levels, guided by sound science and effective management.”*** NABCI seeks to accomplish this vision through (1) broadening bird conservation partnerships, (2) working to increase the financial resources available for bird conservation in the U.S., and (3) enhancing the effectiveness of those resources and partnerships by facilitating integrated bird conservation (U.S. NABCI Committee 2000). The four bird conservation initiatives mentioned above, as well as several other local and regional partnerships, work collectively to pursue this vision.

NABCI is guided by a set of principles that establish an operational framework within which the Initiative and its partners may conduct integrated bird conservation in the U.S. These will articulate a common understanding of the relationship among NABCI, the individual bird conservation initiatives, and all partner entities to ensure recognition of existing federal legislative and international treaty obligations, state authorities, and respect for the identity and autonomy of each initiative. The fundamental components of the conservation approach to be used by NABCI are expressed within its goal:

***To deliver the full spectrum of bird conservation through regionally-based, biologically-driven, landscape-oriented partnerships.***

**The Southeastern Bird Conservation Initiative: National Park Service:** In 1999, the Southeast Region of the National Park Service (NPS) recognized the importance of coordinating existing bird conservation goals into planning and operations of national park units in the southeast, that is, integration of NABCI. In support of this recognition,

the Southeast Regional Office NPS approved and allocated eighty-eight thousand dollars, cost sharing 1:1 with the US Fish and Wildlife Service (FWS) Region 4 (Southeast) to hire a biologist to conduct this two-year project (Interagency Agreement FS028 01 0368). This project is unique in the NPS, and perhaps the nation, and represents a potential model for better coordinating regional bird conservation programs and activities within and outside the NPS. It further represents a progressive action toward institutionalizing bird conservation as a programmatic priority in the Southeast Region of NPS and potentially the nation.

As envisioned, the integration of NABCI into the Southeastern NPS involves:

- 1) Development and delivery of Avian Conservation Implementation Plans,
- 2) Coordination with NPS Inventory and Monitoring Program,
- 3) Development of a web-based project site,
- 4) Establishment or enhancement of bird conservation partnerships,
- 5) Identification and exploration of potential funding opportunities, and
- 6) Technical guidance and assistance as needed or requested.

This ACIP fulfills one aspect of the plan outlined above and serves as a basis for future bird conservation actions in CHAT and with adjacent partners or landowners. Concurrently, the development of a Memorandum of Understanding (MOU) between the FWS and the NPS (Appendix A) to implement Presidential Executive Order (EO) 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (US Government 2000), calls for integration of programs and recommendations of existing bird conservation efforts into park planning and operations. Complementing each other, the MOU and the Southeastern Bird Conservation Initiative will advance bird conservation in the Southeast Region of the NPS beyond current regional NPS efforts.

### **Role of NPS in Avian Conservation**

The interagency agreement that facilitates this partnership supports both FWS and NPS management policies. Specifically for the NPS, the agreement supports and advances the Strategy for Collaboration, a visionary document developed and signed by the Southeast Natural Resource Leaders Advisory Group (SENRLAG 2000), a consortium of 13 land and resource management agencies in the Southeastern United States whose vision is to encourage and support cooperation in planning and managing the region's natural resources. Furthermore, the agreement is aligned with and implements a variety of NPS Management Policies (2001) including, but not limited to, External Threats and Opportunities, Environmental Leadership, Cooperative Planning, Land Protection, and especially Natural Resource Management that details policy and management guidelines which apply to bird conservation. Important policies in the Natural Resource Management chapter include:

- Planning for Natural Resource Management
- Partnerships
- Restoration of Natural Systems
- Studies and Collection

- General Principles for Managing Biological Resources
- Plant and Animal Population Management Principles
- Management of Native Plants and Animals
- Management of Endangered Plants and Animals
- Management of Natural Landscapes
- Management of Exotic Species
- Pest Management
- Fire Management and
- Water Resource Management

The NPS is the fourth largest landowner in the United States, consisting of over 380 national park units covering 83 million acres of land and water with associated biotic resources ([www.nps.gov](http://www.nps.gov)). The 64 units in the Southeast Region of the NPS represent 16% of the total number of park units in the national park system and cover approximately 5% of the total land base in the entire system. Park units in the Southeast Region include national seashores (Canaveral National Seashore, Cape Hatteras National Seashore), national parks (Great Smoky Mountains National Park, Everglades National Park), national recreation areas (Big South Fork National River and Recreation Area), national preserves (Big Cypress National Preserve), national battlefields (Cowpens National Battlefield, Fort Donelson National Battlefield), national monuments (Fort Matanzas National Monument, Ocmulgee National Monument), and others such as the Blue Ridge Parkway, Obed Wild and Scenic River, and Timicuan Ecological and Historic Preserve.

Southeast NPS units provide habitat for over 400 species of migrating, breeding, and wintering birds and include a wide range of Federal and State listed threatened and endangered species. Likewise, these units also provide nest, migration, and winter habitat for most of the eastern species identified in the national bird conservation plans in need of conservation attention.

Additionally, the NPS attracts over 280 million visitors to the parks each year, 120 million of these in the Southeast Region, affording excellent recreational bird watching and opportunities to strengthen bird conservation interpretation, outreach, and education programs. These opportunities, the NPS mission, policies, and organization all lead to the conclusion that the NPS is an extremely valuable partner and contributor to bird conservation in the region.

Nationally, the status of birds in national parks is largely unknown, although many parks have adequate knowledge regarding bird occurrence in the parks (<http://www.npwrc.usgs.gov/resource/othrdata/chekbird/chekbird.htm>). Parks often play a role in ongoing regional bird conservation efforts. Indeed many of these parks are often important to regional, national, or international bird conservation, and many have been designated as Important Bird Areas (IBA's) by the National Audubon Society. To date, there are approximately 64 NPS units that are designated IBA's, 35 of which are considered of global importance (<http://abcbirds.org/iba/aboutiba.htm>). In the Southeast Region, the NPS has 13 global IBA's.

The **NPS Inventory and Monitoring (I&M) Program** has been developed to provide management driven scientific information to national park managers so that resources can be adequately protected within national parks. One of the first phases of this program is to inventory vertebrates, including birds, within the 260 national park units in the program. Once completed, data from the inventories will provide an account of the occurrence and abundance of birds in all the national parks in the program. These records will be stored in the NPS I&M NPSpecies database (<http://www.nature.nps.gov/im/apps/npspp/>). Coordination with I&M network staff is important to developing long-term bird monitoring programs that fulfill both park and NABCI objectives.

**Park Flight** is a NPS international partnership initiative that directs funding toward a variety of NPS programs that involve conservation of Neotropical migratory birds whose life history range covers a US national park and a Latin American protected area. A relatively new program, Park Flight offers parks the opportunity to partner with a Latin American national park or protected area to cooperate on developing bird conservation and education projects (NPS 2002).

Recent increases in NPS base funded programs such as inventory and monitoring, exotic species management, habitat restoration, and fire management all indicate that national park managers recognize that park lands are increasingly subject to a variety of threats and conditions that must be improved to provide the quality of national park experience articulated in the NPS Organic Act (1916). Programmatic funding in these areas will increase the ability of national parks to provide quality habitat and conditions for increased wildlife conservation, including birds. Furthermore, private interests and non-profit conservation organizations have initiated programs, including grant programs, to provide much needed funding to national parks to meet backlogs of identified yet unfunded needs.

## **Park Description**

Chattahoochee River National Recreation Area extends for 48 miles along the Chattahoochee River within the Piedmont Plateau, between the city of Atlanta and the Appalachian Mountains further to the north. The park contains mesic hardwood and pine uplands, scattered cliffs, floodplains, and riparian, aquatic and shoal habitats. The park also contains significant cultural resources, for the river corridor has attracted humans for thousands of years and the remaining features have recorded their passage and story. These natural habitats and cultural resources adjacent to, and partly surrounded by, the growing greater Atlanta metropolitan area, provide a unique opportunity for environmental education and resource-based outreach programs (USDI NPS 2000).

The park's entire 48-mile length runs along the Brevard Fault Zone, which forms the Chattahoochee River channel, one of the oldest river channels in the United States. The Brevard Fault is a major 320+ mile long geological feature that, in part, forms the dividing line between two physiographic provinces, the Appalachian Mountains, and the Piedmont Plateau. The steep and rocky Palisades section of the park is generally considered to be the best location along the entire Brevard Fault Zone to view and study this major geologic feature. The combination of park's mixed habitat types, coupled the old and stable Chattahoochee River channel forming a biological link/corridor with the Appalachian Mountains, has resulted in a high biodiversity within Chattahoochee River National Recreation Area. These diverse habitats support numerous rare and protected aquatic and terrestrial species (NPS 2000).

The park constitutes an important outdoor recreation resource to over 3.7 million people located in a major southeastern metropolitan area. The park's green space and the river significantly improve the quality of life by serving as a sanctuary as well as providing a variety of outdoor recreation opportunities such as hiking, nature viewing, paddling, boating and fishing. The Chattahoochee River is inhabited by 22 species of game fish, including the largest stocked trout fishery in Georgia. At the upstream terminus of the park is Buford Dam, which is operated by the Corps of Engineers. Buford Dam generates electricity and the impounded water, Lake Lanier, provides water to the greater Atlanta metropolitan region. The operation of the dam dramatically alters river flows and water temperatures within the park (USDI NPS 2000).

CHAT consists of 15 separate units, however the park is currently acquiring additional land that will eventually link many of these units. The lands surrounding many of these units, especially closer to Atlanta, are experiencing rapid development and urban sprawl. This urbanization of adjacent lands has resulted in significant river and visual impacts. This rapid urbanization has taxed the region's sewer utility capacity. As a consequence, heavy rains and storm water runoff routinely causes sewer spills that flow directly into the Chattahoochee River. Additionally, siltation is a consistent problem. Currently there are five permitted commercial sand and gravel mining operations within the park. All utilize suction dredging barges along with an upland dewatering plant (NPS 2000).

Existing baseline data on park resources and impacts are minimal at best. Historically, management has focused primarily upon the park's recreational opportunities. It is only lately that the park has begun to address its long overdue natural and cultural resource stewardship responsibilities. The park has recently begun the development of a long-term water quality monitoring program and is increasing resource staff to address many of the challenges facing Chattahoochee River NRA. Although there is a high diversity of native plant species, impacts from exotic species are extensive and pervasive (USDI NPS 2000).

Since the park contains a rich assemblage of natural and cultural resources, and is located so close to a large metropolitan region and institutions of higher education,

Chattahoochee River NRA provides a great opportunity for resource-based environmental educational outdoor lab “facility” (NPS 2000).

## **Avian Resources Southern Piedmont (Cooper 2000)**

The Southern Piedmont as defined in this plan consists of approximately 13 million ha in Alabama, Georgia, South Carolina, and North Carolina (see PIF map and NPS location maps below). The physiographic area is characterized by irregular plains and open hills with occasional tablelands. Elevations range primarily from 100-300 feet, but rise to 1,300 feet at the interface with the southern edge of the Southern Blue Ridge. Major rivers flowing through the Piedmont are the Tallapoosa in Alabama/Georgia, the Alcovy, Appalachian, Broad, Chattahoochee, Flint, Little, Ocumulgee-Oconee, Ogeechee, and Yellow in Georgia, the Savannah on the Georgia/South Carolina border, the Broad, Catawba, Enoree, Long Crane, Lynchees, Pacolet, Reedy, Saluda, Stevens, and Tyger in South Carolina, and the Dan, Deep, Haw, Rocky, and Yadkin in North Carolina.

The primary potential natural forest vegetation in the Southern Piedmont is oak-hickory-pine and Southern mixed forests. The distribution of the oak-hickory-pine forest type includes the Southern Cumberland Plateau and Ridge and Valley physiographic area of Georgia and Alabama, the Piedmont, a majority of the Coastal Plain, and Ouachita Highlands. Dominant hardwoods are white, northern red, black, southern red, blackjack and post oaks, and shagbark, pignut, and mockernut hickories. Tulip (yellow) poplar was probably an important and stable codominant (again, at least in the Piedmont) prior to European colonization. Dogwood, sourwood, sweetgum, tulip (yellow) poplar, and red maple dominate the understory layer.

Shortleaf and loblolly are the dominant pine species found in combination with many of the above hardwoods in Southern mixed forests. There are also scattered stands of longleaf pine, especially along the Fall Line with the Coastal Plain. However, Native Americans frequently used fire, and in the Piedmont their low-intensity burning probably increased the general dominance of oaks while encouraging a greater presence of pines than under purely natural conditions. By 1850, much of the original forest cover was cleared from the Piedmont and replaced with cropland. Oaks and other hardwoods mostly grew on the best soils, which were selectively converted to agriculture.

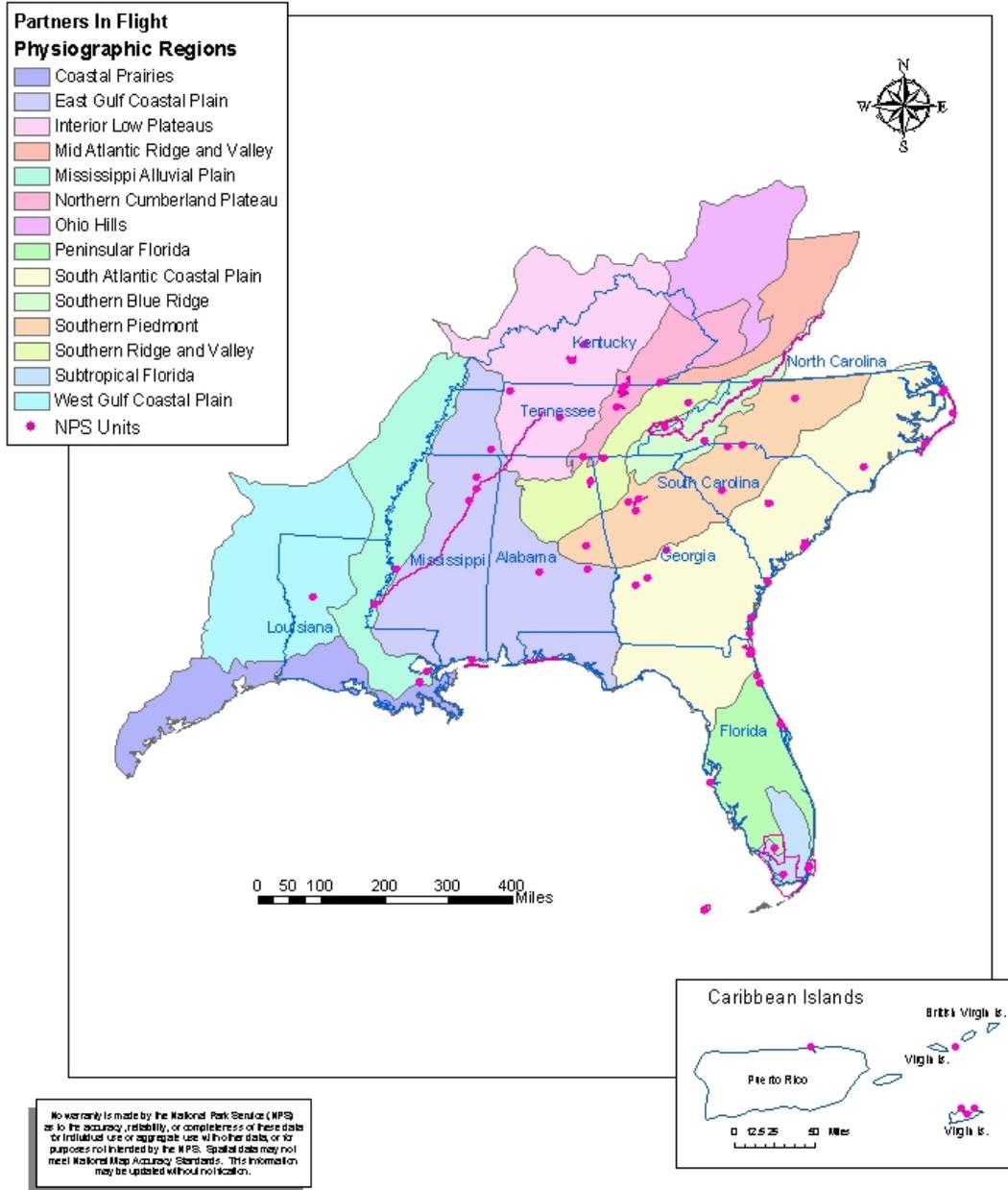
Most of the remaining larger forest blocks are commercial pine or public lands. Overall, forest makes up almost 70% of the Southern Piedmont, but much of this is in or soon will be in development. The three primary goals of the PIF Southern Piedmont plan are to:

- 1) maintain viable (stable or increasing) populations of all native species,
- 2) maintain or enhance ecosystem health, minimizing negative effects of land use,
- 3) accomplish conservation goals while maintaining production of goods and services (e.g., timber products, consumptive and non-consumptive wildlife uses) from natural and agricultural ecosystems.

# Partners in Flight (PIF) Regions

Southeast Region (SER)

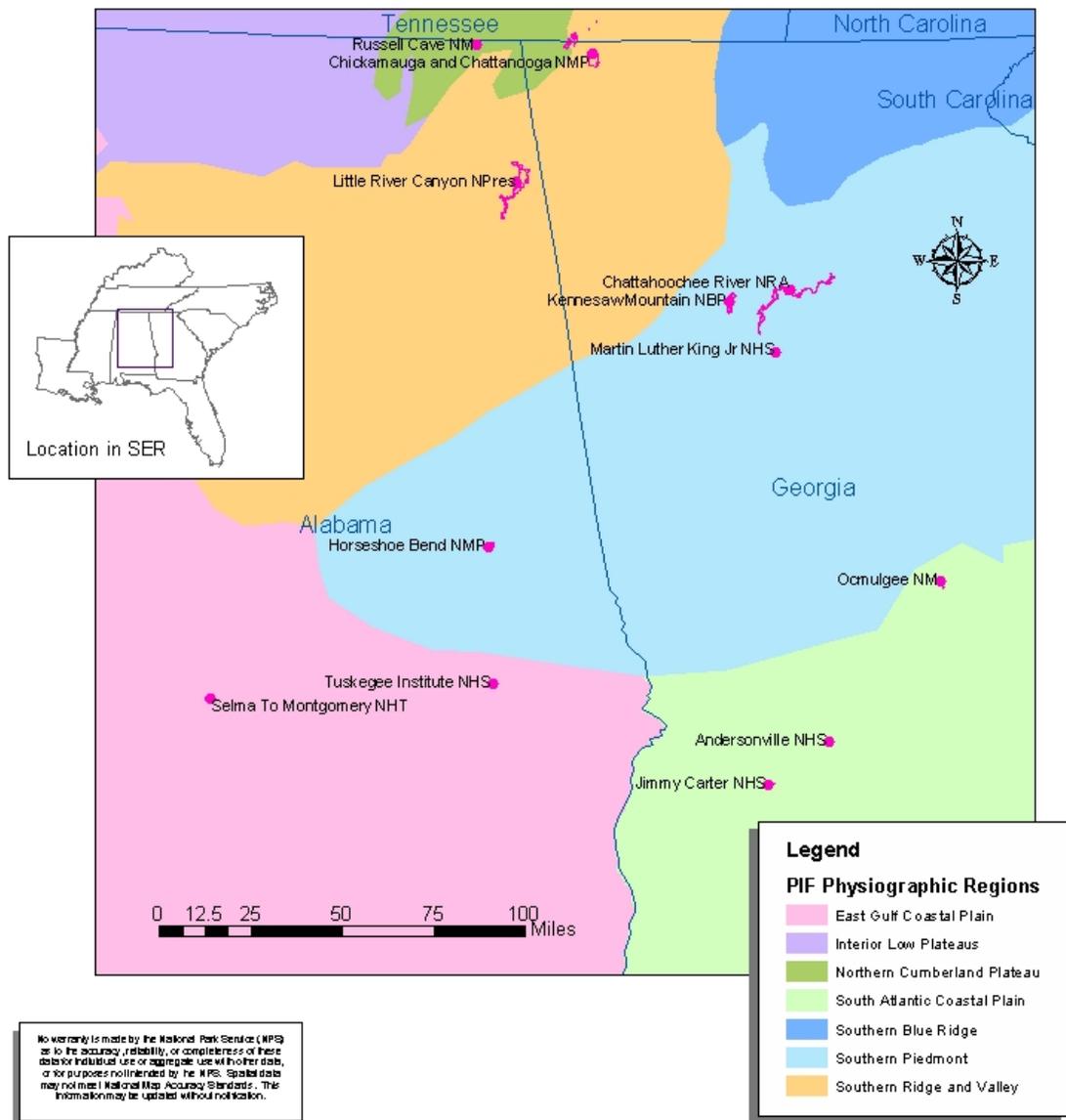
National Park Service  
U.S. Department of the Interior



# Partners in Flight (PIF) Regions and NPS Locations

Southeast Region (SER)

National Park Service  
U.S. Department of the Interior



Produced by Southeast Regional Office GIS, Atlanta, GA

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The management plan for the Southern Piedmont will focus on a relative few priority species of birds, which will be used as "umbrella" species for the other birds. It is a major assumption of this plan that by providing adequate habitat for maintaining viable populations of these umbrella species, adequate habitat will be provided for all other birds as well. Each of the species below, with the possible exception of the Swainson's Warbler, fits this description.

Forest interior species (Upland deciduous/ mixed). The Piedmont forest birds chosen to serve as umbrella are the Wood Thrush and Summer Tanager. These species were chosen because they are believed to be area sensitive and because they have been sufficiently well studied to provide the knowledge base needed to make informed management decisions. Many intensive demographic studies have been conducted in the eastern U.S. on the Wood Thrush. While there have been fewer studies on the Summer Tanager, Project Tanager has provided data on area sensitivity.

Early successional species. In farmland or grassland dominated habitats, the Northern Bobwhite is a species of both high regional importance and conservation concern. This was chosen as an umbrella species because: (1) it is a declining species believed to be representative of an early successional habitat species suite associated with agricultural landscapes; (2) it is economically important as a game species, and hunters and private land owners are important stakeholder groups in this process; (3) there are already serious management efforts to increase habitat for this species (e.g., many Farm Bill efforts); and (4) the habitat requirements for this species are well-studied and specific recommendations can be made without further study. The Prairie Warbler was chosen as a second umbrella species because, while it occupies a variety of early successional habitats such as abandoned fields and woodland margins, it is associated more with forested landscapes with large openings such as those provided by regeneration cuts than with agricultural areas.

Riparian species. The Swainson's Warbler, Louisiana Waterthrush and Acadian Flycatcher are considered both the most sensitive and representative species in this habitat type. Of the three, Swainson's Warbler is probably the most area sensitive, Louisiana Waterthrush is the most closely tied to riparian areas, especially streams, and the Acadian Flycatcher has been the subject of the most studies.

## **Avian Conservation in CHAT**

CHAT does not have an avian inventory. However, Beaton (2000b) describes the birding opportunities and bird fauna at several CHAT sites. CHAT is one of several parks in the Southeast Coast I&M Network for which a study plan has been developed to inventory natural resources in the Southeast Network. An inventory is currently being conducted under this initiative and is expected to be completed in 2005. In nearby Kennesaw Mountain National Battlefield Park, Beaton (2000a) has documented 175 species. Presumably, bird inventory in CHAT could yet significantly more species due to extensive riparian habitats of the park. Waterbirds and wintering waterfowl are also primary species along the river and in the impounded sections of the river.

**Park Priorities:** Park staff and consultants have not identified any particular species that is a park management concern or high priority for conservation. Rather, park staff is concerned about conserving all birds and their habitats in CHAT. Additionally, CHAT has some interest in reintroduction of Wild Turkey and has noticed increased populations of resident Canada Geese along the river.

**Inventory:** Bird inventory data provide important information for park management, particularly when inventories are conducted within the framework of the NPS I&M Program. However, CHAT's inventory is incomplete and in need of additional effort. CHAT is one of several parks in the NPS Southeast Coast Inventory and Monitoring Network (SEC I&M) and plans to complete the inventory are underway (USDI NPS 2000).

**Threatened and Endangered Species:** No known Federally listed threatened or endangered species are known to nest in CHAT. Migrant Federally listed species are unknown in the park.

No known Georgia Protected Bird Species regularly occur in CHAT.

Several high priority PIF species for the Southern Piedmont are likely to occur in CHAT (see below and Appendixes A-B) including Prothonotary Warbler, Pine Warbler, Brown-headed Nuthatch, Wood Thrush, Field Sparrow, Northern Bobwhite, Red-headed Woodpecker, Eastern Wood-Pewee, Summer Tanager, and Chuck-will's-widow. A large number of high priority Neotropical migrant species likely migrate through the park as well including Acadian Flycatcher, Swainson's Warbler, Prairie Warbler, Louisiana Waterthrush, Kentucky Warbler, Cerulean Warbler and Worm-eating Warbler. High priority waterbirds include Green Heron, Yellow-crowned and Black-crowned Night Herons, and Great Blue Heron. Several wintering waterfowl species occur on the reservoirs and many raptors use the river corridor for migration.

**Monitoring:** Currently, a Christmas Bird Count (CBC; covering a portion of the park in the Cochran Shoals unit) is the only bird monitoring project being conducted at CHAT.

Additionally, because CHAT attracts a very species rich Neotropical migrant, raptor, waterfowl, and waterbird migrant fauna, a tremendous amount of recreational birding is conducted in the park.

**Research:** Scientific research is permitted within the park and currently one project is being conducted:

- Study of herbivory among mallards and geese and this impact on natural resources

**Outreach:** One educational and outreach program related to birds is undertaken in the park:

- Owl prowls are conducted in conjunction with the Chattahoochee Nature Center

## Park Identified Needs for Avian Conservation

CHAT has identified several projects that would enhance their knowledge of park fauna and ability to manage park resources.

**Inventory:** The park would like to complete the baseline inventory.

**Monitoring:** The park would like to:

- Determine status and trends of birds in the park
- Establish water course bird monitoring (similar to Breeding Bird Survey route)
- Establish Migration Monitoring program
- Monitor Wetland restoration and bird community response

**Research:** The park would like to determine response of birds to changes in habitats due to development pressures and other habitat loss.

**Outreach:** The park would like to develop an environmental education program, specifically conducting bird walks several times per year.

## Coordination with Regional Conservation Initiatives

**North American Bird Conservation Initiative:** NABCI bird conservation planning units, referred to as Bird Conservation Regions (BCR), are often larger than other planning units associated with other plans, such as Partners In Flight. For example, CHAT is within the NABCI Piedmont BCR that extends from New Jersey to east-central Alabama and lies between the Appalachian Mountains and Southeastern Coastal Plain BCR's (see BCR map below) and encompasses several PIF physiographic areas (the planning unit for PIF)(compare to PIF map).

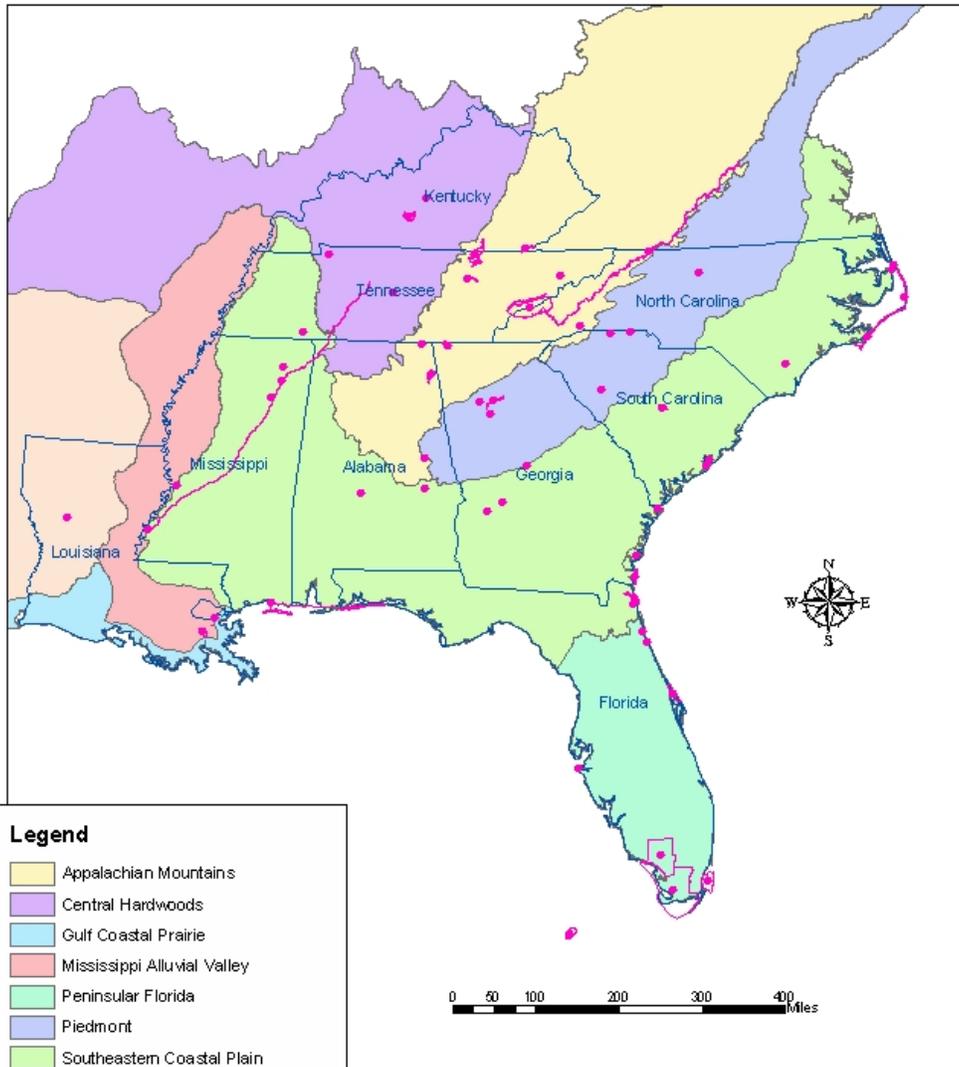
Several NABCI BCR's have coordinators whose primary responsibility is to coordinate all bird conservation planning in the BCR, across all agencies and organizations. Currently, the Piedmont BCR does not have a designated coordinator; however, a bird conservation coordinator for the Southeastern Coastal Plain (part of the Atlantic Coast Joint Venture) has responsibility for this region and can provide valuable assistance to CHAT with implementation of aspects of this ACIP. Active bird conservation planning is underway in the adjacent Appalachian Mountains BCR (see contacts below) and communications with this coordinator will be important to fully assess the park's role in regional and landscape scale bird conservation.

**North American Waterfowl Management Plan (NAWMP) :** The NAWMP (<http://northamerican.fws.gov/NAWMP/nawmphp.htm>) is completed and has been revised several times, incorporating updated goals and strategies based on new information. This plan is one of the most successful bird conservation delivery

# Bird Conservation Regions

Southeast Region (SER)

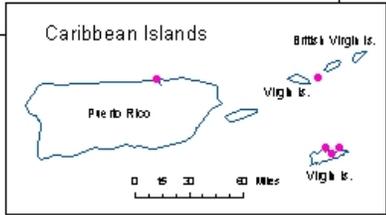
National Park Service  
U.S. Department of the Interior



**Legend**

- Appalachian Mountains
- Central Hardwoods
- Gulf Coastal Prairie
- Mississippi Alluvial Valley
- Peninsular Florida
- Piedmont
- Southeastern Coastal Plain
- West Gulf Coastal Plain/Ouachitas
- NPS Units

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programs in the United States, being monetarily supported by the North American Wetlands Conservation Act (NAWCA).

**Partners In Flight:** Goals and strategies for the Southern Piedmont can be found in the draft bird conservation plan, not yet available to the public. The current plan identifies priority bird and habitat conservation goals that must be implemented in order to achieve bird conservation success in this region.

Similar to NABCI BCR's, PIF physiographic areas often do not have designated coordinators. However, state level non-game agencies with investment in PIF will establish key personnel to develop partnerships among cooperators in the physiographic area. The State of Georgia does not currently have a PIF coordinator. However, non-game biologists in Georgia are available and can be instrumental in assisting CHAT to implement recommendations identified in this ACIP and projects important to bird conservation relative to Georgia's role in implementation of the Southern Piedmont PIF plan.

**United States Shorebird Conservation Plan (USSCP):** The USSCP has been completed and is available on the World Wide Web (<http://shorebirdplan.fws.gov/>). A regional step down plan is in preparation by FWS personnel and should be available in 2004. Since CHAT has little habitat of regional importance to shorebird conservation, recommendations for shorebird conservation are not presented.

**Waterbird Conservation for the Americas (WCA):** The WCA plan has been completed and is available on the World Wide Web or can be ordered from the US Fish and Wildlife Service National Conservation Training Center (<http://www.waterbirdconservation.org/>). CHAT does have some important species and habitat conservation issues important to success of this initiative.

## **Integration of NABCI Goals and Objectives into Park Planning and Operations**

### **NABCI Implementation Recommendations**

To successfully achieve park established goals and actively participate in NABCI, the park could implement a variety of projects in different NPS programs. Most of these projects would require some level of participation by many existing park programs and could either be achieved through NPS funding, or more likely, through establishing or improving partnerships with agencies and organizations that already have the necessary expertise to provide guidance, funding, and execution of these programs. Programmatic areas where bird conservation actions are likely to be focused are:

- Inventory
- Monitoring

- Habitat Restoration
- Threat Management (includes exotic species, air quality, water quality, etc.)
- Research
- Compliance
- Outreach
- Partnerships

To the extent appropriate, each of these program areas will be discussed separately and within each, specific opportunities identified that, when implemented, will enable the park to meet its mandates (current and expected), as well as integrate NABCI into its planning and operations. With emphasis added; the park is not expected to implement any of these recommendations or be obligated to pursue any opportunity other than those the park is required to do by law or NPS program or policy. In other words, participation in this effort is currently voluntary. However, implementation of EO 13186 (US Government 2000) will require NPS to incorporate a wide range of bird conservation programs into planning and operations. The development of the MOU between the FWS and the NPS will establish a formal agreement to promote bird conservation within the agency by incorporating goals and strategies of existing bird conservation initiatives, plans, and goals into park planning and operations.

Should the park decide to implement any of these projects, further consultation with bird conservation contacts is encouraged to obtain updated information on the relevance of these opportunities in regional bird conservation.

High priority projects are identified in **bold** print. Priorities that the park is encouraged to seek NPS funding for are marked with an asterisk (\*). These projects are those that are critical to the stabilization or improvement of a bird population in the planning region.

**Inventory:** An inventory of birds in the park has not been completed. Once an inventory is complete, distribution and abundance data are desired to fully understand the status of birds in the park so that conservation actions can be implemented. Information regarding the status of high priority species (as identified in the Southern Piedmont bird conservation plan and the USFWS Species of Conservation Concern [2002]) is needed to effectively structure park management for the continued preservation and enhancement of the park's avifauna. The park's main inventory needs are to:

- **complete the inventory for breeding birds in all habitats, (river course, riparian forests, upland forests, wetlands, and impoundments, including the 41 islands in the river course, etc.)\***
- **locate colonial waterbird rookeries and roosts and other waterbird use areas**
- **complete the inventory for raptors, Neotropical migrants and waterbirds during migrations**

Additionally, CHAT is encouraged to:

- **verify other avian observational data collected in the park and enter into the appropriate database (NPSpecies, National Point Count Database, ebird(Cornell Laboratory of Ornithology; <http://www.ebird.org/about/index.jsp>)\***
- **standardize inventory and monitoring methodology to conform to NPS and/or FWS recommended standards (Fancy and Sauer 2000; Hunter 2000)**

**Monitoring:** The park does not have an active bird monitoring program. However, several high priority species are likely to occur in the park. Following completion of the inventory, efforts should be made to establish appropriate monitoring programs based on park and regional conservation needs. Close coordination with adjacent BCR coordinators and the Georgia non-game biologists is needed to identify and implement high priority projects on park lands and to ensure that park efforts contribute to park or regional bird conservation rather than undertake an action or actions that are not needed or are better conducted in other areas. The park is encouraged to consider establishing permanent monitoring stations in main habitat types to collect baseline data on the distribution and relative abundances of priority species. This information will be useful for documented potential changes in park avifauna resulting from habitat change or management activities. Links to literature detailing inventory and monitoring methodologies for various avian groups (e.g. songbirds, shorebirds, raptors, etc.) can be found at: <http://biology.dbs.umt.edu/landbird/mbcp/groups.htm>. Specific recommendations are to:

- **develop appropriate breeding season, migration and winter monitoring programs for high priority species following completion of inventory**
- **consider establishment of a river corridor migration program to detect migration of raptors and waterbirds through the river course**
- **standardize inventory and monitoring methodology to conform to NPS and/or FWS recommended standards (Fancy and Sauer 2000, Hunter 2000)**

**Habitat Restoration:** Landscape conditions in the Southeastern US have changed dramatically since early European explorers began documenting the area, its habitats, and its inhabitants. Historic landscapes were influenced by Native American burning, wildfire, bison, beaver, and elk, as well as by insect outbreaks and weather events (Hunter et al. 2001, Williams 2002), thus resulting in a landscape mosaic that supported a rich and diverse bird fauna in the Southeast (Barden 1997; Brawn et al. 2001). The arrival of Europeans and the subsequent change in landscape has dramatically effected bird habitat and bird populations. Bird conservationists have long recognized that habitat restoration is critical to restoration of bird populations, stabilizing or reversing bird declines, and removing birds from both State and Federal Threatened and Endangered Species lists.

Recently, habitat restoration efforts have increased on NPS lands due to the increased restoration emphasis of the Management Policies (NPS 2001). Parks may use a wide range of management tools to restore wetland, grassland, woodland, and other habitats. Restoration tools include, but are not limited to, forest management practices (e.g. silviculture), prescribed fire, exotic species management, and public use and recreation management. In addition, parks can coordinate infrastructure development (e.g. roads and buildings) with restoration activities to mitigate potential adverse impacts.

Due to the protected nature of CHAT lands, and generally those in the national park system, the condition of habitats for bird use may be of higher quality than other natural, developed, agricultural, or forest lands under other management regimes. However, national park lands can be greatly improved for wildlife, and particularly bird use, by restoring processes important for habitat formation, succession, and structural development. Largely, these processes have not been managed historically in the national park system, but current policy allows for active management of species, populations, and lands to provide for long-term conservation of park resources. Protection, restoration, and enhancement of habitats in CHAT can greatly contribute to established habitat goals identified in the Southern Piedmont bird conservation plan and Southeast Waterbird Conservation Plan.

The park is largely a riparian corridor with mesic hardwood and pine uplands, scattered cliffs, floodplains, and riparian, aquatic and shoal habitats. Much of this habitat provides suitable area and vegetative cover for nesting landbirds and waterbirds, but could be improved through management techniques to restore the structural complexity of the forests in CHAT that are required for many of the high priority bird species that occur there. Specific recommendations are to:

- **maintain current forested acreage to accommodate Neotropical migrants, breeding and wintering forest birds\***
- **restore riparian corridor through\***
  - **streambank restoration and stabilization**
  - **revegetation with wetland/riparian trees**
  - **restoration of adjacent wetland habitats**
  - **protection of adjacent lands with conservation easements with private landowners**
  - **convert existing easements with non-native vegetation to native riparian vegetation (trees and native shrubs and grasses)**
- **manage forests toward old growth conditions, implementing appropriate management techniques to develop desired understory structure for high priority birds\***
- **link riparian corridor to upland areas\***

- **protect existing snag trees, where not identified as a safety hazard, as important to cavity nesting birds\***
- **develop land use protection and habitat conservation plan with local partners\***
- **enhance water quality to support aquatic biota necessary to support existing riparian corridor nesting birds and birds that use the riparian corridor for foraging\***
- **document all major habitat management activities, including information such as location (e.g. UTM coordinates), and a description of methods and of pre- and post-management habitat conditions. This information, when coupled with bird distribution and abundance data, is useful for assessing and replicating conservation actions**

**Threat Management:** The park is subject to a wide range of threats and activities that could negatively impact quantity and quality of habitat for birds and other wildlife. Although these threats are unquantified, loss of habitat due to development, water pollution, and exotic plants and animals are believed to be primary threats. The park is encouraged to:

- **work with the local community and other land conservation interests in the region to minimize habitat fragmentation and potentially restore habitats beneficial to wildlife and bird species of the region\***
- **work with local community to continue and enhance improvement of water quality of river and associated wetland habitats and reduction of sewerage input to the river\***

Impact of exotic species on birds at BIS0 is largely unquantified, yet domestic dogs (off leash) and feral cats may damage birds directly through predation or habitat alteration. Park managers are encouraged to:

- **work with adjacent landowners and neighbors, the local community, and public officials to curb unregulated and free roaming feral cats and domestic dogs in the park\***

The US Department of Agriculture, Agricultural and Plant Health Inspection Services (APHIS) Wildlife Services unit (WS) is available to provide mammal reduction capability (see contacts). However, live trapping or cats in coordination with the local humane society often provides level of management desired. Cape Hatteras National Seashore has recently completed a feral cat reduction campaign that could be used as a model in CHAT (Altman 2002, Harrison 2002).

Although no significant exotic plants species are negatively impacting habitat at CHAT, it is important to establish and continue inventory and monitoring for exotic plant species. If necessary, consult with regional Exotic Plant Management Team (EPMT) to remove exotic plant species. Currently, no EPMT provides service the CHAT area. Until an EPMT is established that can provide assistance to CHAT, staff is encouraged to:

- **consult with the regional pest management specialist (see contacts) to establish an exotic plant management program\***

Additionally, the park is encouraged to:

- **prohibit future installation of communications towers in the park and work with adjacent landowners to place future towers well away from this important migratory bird route\***
- **hire additional protection staff to regulate poaching of wildlife and disturbances to wildlife**
- **develop a strong planning partnership with local landowners and communities**

## **Research**

- assess feasibility of reintroduction of Wild Turkey
- list park needs and projects on Research Permit and Reporting System web site (RPRS)
- develop contact with Southern Appalachian Mountains Cooperative Ecosystem Studies Unit (CESU) at the University of Tennessee, Knoxville, TN

**Compliance:** Park compliance with the Migratory Bird Treaty Act and the Executive Order 13186 (US Government 2000) is necessary to assure that park activities incorporate bird conservation into park planning and operations. Further, to ensure that migratory birds are considered in all phases of park planning processes, especially during the National Environmental Policy Act (NEPA) and the Director's Order #12 Compliance processes, the park should consider adding specific language in project evaluations that requires consideration and implications of park projects on migratory birds. The MOU being developed between the NPS and the FWS will likely contain specific language requiring a park to consider implications of park projects on migratory birds. Additional considerations are to encourage:

- **park staff to begin specific consideration of migratory birds during park planning processes**

- park staff to attend USFWS training on implementation of EO 13186 (US Government 2000) at the National Conservation Training Center (NCTC) (when available) or other training on migratory bird conservation in North America; NCTC has several courses and training related to conservation of migratory birds (<http://training.fws.gov/courses.html>)

The USFWS NCTC offers and reserves two tuition free slots for National Park Service employees wishing to attend NCTC courses on a first come, first served basis. Additionally, discount lodging is also available while attending a NCTC course.

## Outreach

- **participate in International Migratory Bird Day (IMBD) events with a local partner (<http://birds.fws.gov/imbd.html>) such as the Atlanta Audubon Society (<http://www.atlantaudubon.org/>)\***
- **continue to enhance visibility of bird conservation issues through organized bird walks and consider extending to other programs such as owl prowls and raptor surveys with the public\***
- **encourage accurate documentation from recreational birding outings (see Cornell University's eBird monitoring program (Cornell Lab. Ornith. 2002 (<http://www.ebird.org/about/index.jsp>))\***
- **develop outreach to adjacent landowners on the importance of habitat protection to the ecology of the area**
- **work with adjacent landowners and neighbors, the local community, and public officials to curb unregulated and free roaming feral cats and domestic dogs**
- **support bird conservation by serving shade-grown coffees at meetings, events, and the office buildings in the park (<http://www.americanbirding.org/programs/consbcof3.htm>)**
- park interpretation/education staff are encouraged to attend USFWS training on Migratory Bird Education at NCTC
- subscribe to Georgia Birder's Online ([listserv.uga.edu/archives/gabo-l.html](mailto:listserv.uga.edu/archives/gabo-l.html)) an internet based forum for the exchange of information related to Georgia birds, birders, and birding and is open to all interested individuals

**Partners and Partnerships :** Partnerships for land conservation and protection will perhaps have the greatest positive influence on bird conservation above all other landscape scale planning. Specific recommendations are to:

- **keep abreast of Gwinnett, Fulton, and Cobb County initiatives that could impact park resources\***
- **contact NRCS private lands biologists to discuss private landowner initiatives applicable to the area and develop land use agreements with local landowners\***

Several private landowner programs could be implemented that would serve to protect areas adjacent to CHAT and potentially improve water and habitat quality in the vicinity

- **develop partnership with Georgia Division of Wildlife non-game staff to implement aspects of this plan**
- **contact the nearest Joint Venture office (see Funding section for explanation of Joint Ventures) or BCR coordinator to develop partnerships and funding proposals tiered to priorities established by the park, this ACIP, and the Southern Piedmont bird conservation plan**
- **contact and partner with the Atlanta Audubon Society to implement various aspects of this plan**

**Funding Opportunities:** Internal NPS funding is often an effective source to obtain funding; however, the project will have to be a fairly high priority among the park's natural resource program to successfully compete for the limited funding available in the NPS. Therefore, partnerships and outside funding programs are often more productive for securing bird conservation funding. CHAT is encouraged to enter all high priority projects into the NPS Performance Management Information System (PMIS) database. Funding for conservation projects for Neotropical migrants is also available through the Park Flight program. Suggestions include:

- **increased base funding to implement basic protection and management needs for birds and their habitats (habitat-based management not only benefits the birds but other wildlife as well)**

With the exception of the North American Waterfowl Management Plan (NAWMP and its associated funding legislation, the North American Wetland Conservation Act), funding opportunities for bird conservation programs, plans, and initiatives have been lacking. Only within the last decade have other appropriate and specific sources for bird conservation funding been created and used. The NAWMP has been supported for approximately 14 years by the North American Wetlands Conservation Act (NAWCA 1989). This program has provided \$487 million in appropriated funds matched with \$1.7 billion for wetland and bird conservation projects since its inception. In 2002 alone, over \$70 million US dollars were awarded to US and Canadian agencies and organizations to enhance waterfowl populations by improving, restoring, or protecting wetland habitats. To adequately evaluate projects and distribute these funds,

partnerships called Joint Ventures were established. Nationally, 14 (11 US, 3 Canada) Joint Ventures have been established, several which are funded and staffed. Internet links to Joint Ventures are:

(<http://southwest.fws.gov/gulfcoastjv/ojvcontact.html>) and  
(<http://northamerican.fws.gov/NAWMP/jv.htm>).

Funding through NAWCA is highly underutilized by the NPS and any park unit that has wetland, water, or bird conservation needs associated with wetland are encouraged to investigate using this funding source. Naturally, there are certain requirements to be eligible for all grants and park managers are encouraged to consult with the nearest Joint Venture, BCR, PIF Coordinator, to learn how this program might be applicable to implementation of this plan, and other park wetland issues. CHAT is within the operational Atlantic Coast Joint Venture and contact with the joint venture coordinator and Georgian non-game biologists will provide opportunity to investigate use of this funding source and develop appropriate proposals.

Internal FWS funding programs may be used to support projects, but no effective method of project proposal delivery to these sources is currently in place for the NPS. Current funding in these programs may result from FWS familiarity with NPS needs, or NPS participation in one of the area FWS Ecosystem Teams, where a project has been identified and proposed to be funded through the Ecosystem Team. CHAT is encouraged to:

- **become a member of the USFWS Southern Appalachian Ecosystem Team**

One unexplored yet potentially fruitful funding source for national parks is the myriad of grants through the FWS State Programs, where grants are awarded to private individuals engaged in habitat conservation projects. No funding is directly available to national parks, but identified projects with important or critical adjacent landowners can sometimes be funded through these sources. Similar programs are available if the adjacent landowner is a federally recognized American Indian tribe.

Specific congressional appropriations to protect migratory birds has recently been authorized under the Neotropical Migratory Bird Conservation Act (2000) (<http://www.nfwf.org/programs/nmbcapp.htm>). Appropriations through this Act are authorized up to \$5 million per year. However, in 2004, appropriation was approximately \$4million and a majority of this funding was directed toward projects in Central and South America.

Many of the identified projects are eligible for funding under various grant programs of the National Fish and Wildlife Foundation (<http://www.nfwf.org/programs/programs.htm>).

Other prominent funding sources available to NPS managers for bird conservation are listed on this projects web site at: <http://southeast.fws.gov/birds/NPSHighlits.htm>. Funding opportunities for migratory bird conservation are available yet most natural

resource agencies are not fully aware of and/or understanding of how to use these sources. Perhaps a consolidated migratory bird funding source catalog will become available to managers in the future; this is needed.

**Contacts:** Primary contacts within the region can be obtained by viewing the web site for the Southeastern Bird Conservation Initiative, National Park Service at <http://southeast.fws.gov/birds/npsbirds.htm>. This web site will provide contact information of the appropriate bird conservation coordinator in the region for park personnel. Primary contacts for CHAT are:

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## APPENDIX A

### Southern Piedmont Partners in Flight Bird Conservation Plan: Avifaunal Analysis

Entry criteria for identifying priority species, with indications for why the species is considered to be of conservation interest (definitions below).

Priority Entry Criteria <sup>1</sup>	Species	Total PIF Priority Score	Concern Scores		Percent of BBS Population	Migratory Status <sup>2</sup>	Local Geographical or Historical Notes
			Area Importance	Population Trend			
Ia.	Bewick's Wren Appalachian subsp.	35	5	5		D	Possibly extinct
	Red-cockaded Woodpecker	29	3	3		RP	Now restricted to GA (?)
	Henslow's Sparrow	28	2	5		B	Presently extirpated (NC,SC) Throughout physio. area
Ib.	Swainson's Warbler	27	3	3	1.0	E	GA(SC along Savannah Riv.)
	Painted Bunting Eastern subsp.	27	2	3		B	GA(SC along Savannah Riv.) Very, very peripheral
	Bachman's Sparrow	27	3	4	3.0	E	GA, SC
	Brown-headed Nuthatch	25	5	3	21.6	R	
	Prairie Warbler	25	5	5	14.6	B	
	Cerulean Warbler	25	2	3		B	Presently extirpated
	Wood Thrush	23	4	3	6.3	B	
	Worm-eating Warbler	23	2	3	1.5	B	
	Whip-poor-will	22	5	3	11.1	B	
	Prothonotary Warbler	22	3	3		B	
	Louisiana Waterthrush	22	3	3	2.4	B	
	Kentucky Warbler	22	3	3	1.8	B	
	Field Sparrow	22	5	5	6.3	D	
II.	Northern Bobwhite	21	4	5		R	
	Red-headed Woodpecker	21	3	5		D	
	Eastern Wood-Pewee	21	5	4		B	
	Loggerhead Shrike	20	3	5		D	
	Summer Tanager	20	5	3	8.5	B	
III.	Chuck-will's-widow	20	4	2	5.5	B	
	Dickcissel	20	2	3		B	

Table 1 (continued).

Priority Entry Criteria <sup>1</sup>	Species	Total PIF Priority Score	Concern Scores		Percent of BBS Population	Migratory Status <sup>2</sup>	Local Geographical or Historical Notes
			Area Importance	Population Trend			
IV.	Eastern Meadowlark	18	4	5	5.2	D	
	Northern Flicker	17	5	4			
	Blue Jay	17	5	5			
	Common Grackle	15	4	5			
V.	Pine Warbler	19	5	2	13.3	D	
VI.	Bald Eagle	17	2	3		D	
VII.	Acadian Flycatcher	21	3	3	3.3	B	Uwharrie Mountains, NC
	Hooded Warbler	21	3	3	3.2	B	
	Barn Owl	20	2	5 <sup>4</sup>		D	
	Black-throated Green Warbler	20	2	3		B	
	American Kestrel	19	2	5 <sup>4</sup>		D	
	Grasshopper Sparrow	19	3	4		D	
	Wild Turkey	17	3	2		R	
	Horned Lark	17	2	5 <sup>4</sup>		D	

<sup>1</sup>Entry criteria:

- Ia. **Overall Highest Priority Species.** Species with total score 28-35. Ordered by total score. Consider deleting species with AI ≤ 2 confirmed to be of peripheral occurrence and not of local conservation interest, but retain species potentially undersampled by BBS or known to have greatly declined during this century.
- Ib. **Overall High Priority Species.** Species with total score 22-27. Ordered by total score. Consider deleting species with AI ≤ 2 confirmed to be of peripheral occurrence and not of local conservation interest, but retain species potentially undersampled by BBS or known to have greatly declined during this century.
- II. **Area Priority Species.** Species with slightly lower score total 19-21 with PT+AI=8+. Ordered by total score. These are overall moderate priority species.
- III. **Additional Species of Global Priority.** Add WatchList species (Partners in Flight-National Audubon Society priority species at national level), not already listed in either I or II, with AI=2+. Order by total score. Consider deleting species with AI=2 if confirmed to be of peripheral occurrence and not of local conservation interest, but retain if a local population is viable and/or manageable. These are also overall moderate priority species.

- IV. **Additional Abundant and Declining Species.** Species AI+PT=9 or 10, not already listed in I, II, or III. Ordered by total score. These are overall low priority species. Among Southeast physiographic areas, Northern Flickers, Common Yellowthroats, Indigo Buntings, and Chipping Sparrows are frequently included under this criterion and though still abundant and widespread these species probably deserve more monitoring attention at a regional or national level. In a number of physiographic areas, however, species meeting this criterion include starlings, grackles, cowbirds, blue jays, and house sparrows, species for which conservation interest is only on how their populations negatively effect higher priority species.
- V. **Additional Species of Area Responsibility.** Species with high percent of Breeding Bird Survey (BBS) population (>5% in physiographic areas <200,000 km<sup>2</sup>, >10% in physiographic areas >200,000 km<sup>2</sup>) if not already listed above. Ordered from highest to lowest percentages, also include species with exceptionally high relative abundance (detection rates on BBS routes). These are overall low priority species, but are still designated High Responsibility within physiographic area primarily for general monitoring purposes but little if any directed management action.
- VI. **Additional Federally Listed Species.** Federal listed species if not already included above. Overall low priority, but appropriate legal obligations ( legal priority species ) to protect through appropriate management and monitoring still apply. Only Bald Eagle meets this criterion in some Southeast physiographic areas.
- VII. **Local or Regional Interest Species.** Includes game or nongame species identified by State Working Groups. Also, may include species often meeting criteria for I or II within other physiographic areas and therefore of regional interest for monitoring throughout the Southeast. These are overall low priority species within physiographic area, but may be more important within one or more States (especially where multiple states have designated some special protective status on the species).

<sup>2</sup> Local Migratory Status, codes adapted from Texas Partners in Flight as follows:

- A = Breeds in temperate or tropical areas outside of region, and winters in temperate or tropics outside of region (*i.e.*, passage migrant).
- B = Breeds in temperate or tropical areas including the region, and winters exclusively in temperate or tropics outside the region (*i.e.*, includes both breeding and transient populations).
- C = Breeds in temperate or tropical areas outside of region, and winters in both the region and in temperate or tropical areas beyond area (*i.e.*, includes both transient and wintering populations).
- D = Breeds and winters in the region, with perhaps different populations involved, including populations moving through to winter beyond the region in temperate or tropical areas (*i.e.*, populations may be present throughout year, but may include a large number of passage migrants).
- E = Species reaching distributional limits within the region, either as short-distance or long-distance breeding migrants, but at population levels above peripheral status.
- F = Same as E except for wintering (non-breeding) migrants.
- R = Resident, generally non-migratory species (though there may be local movements).
- RP= Resident, non-migratory species, reaching distributional limits within the region, but at population levels above peripheral status.
- P = Pelagic, breeding grounds outside of region, but can occur during breeding season.
- PB = Post-breeding dispersal or non-breeding resident; species present during breeding season, but not known to be breeding in the region proper.

<sup>3</sup>Highest percent of breeding population recorded in temperate North America; numbers in \_\_\_\_\_ are likely projections; ? indicates species widespread outside of temperate North America and/or waterbirds poorly sampled by Breeding Bird Survey within physio. area.

<sup>4</sup>AI or PT score revised from what was derived by BBS data, or lack thereof, based on better local information (as documented in Appendix \_\_).

## APPENDIX B

### Southern Piedmont Partners in Flight Bird Conservation Plan: Habitats and Objectives

Once species are grouped into the above tiers (Table 1), then habitats and species suites are identified to look for patterns within and among habitats and species suites, within each physiographic area. Consider using “optimal” and “suitable” designations for habitat as in Hamel (1992). Identify overall level of attention (identified below) and types of actions needed (supplemental action scores as identified in Draft Southeast Species Prioritization document, February 10, 1998).

Habitat	Priority Entry Criteria	Species	Total PIF Priority Score	Concern Scores <sup>1</sup>				Conservation Action <sup>2</sup>				Optimal, Suitable, or Marginal	
				Area Importance	Population Trend	Breeding Threats	Sum	Survey/ Invent.	Manage.	Monitor.	Resear.		Overall Level
Grasslands	Ia.	Henslow's Sparrow	28	2	5	5	12	5	5	1	3	V	O
	Ib.	Bachman's Sparrow	27	3	4	4	11	4	3	4	3	II	S
	II.	Northern Bobwhite	21	4	5	3	12	3	2	2	2	III	O
		Loggerhead Shrike	20	3	5	4	12	4	4	4	3	III	O
	III.	Dickcissel	20	2	3	4	9	4	4	1	3	V	M
	IV.	Eastern Meadowlark	18	4	5	3	12	1	3	2	2	III	O
	VII.	Barn Owl	20	2	5 <sup>1</sup>	<u>5</u>	12	4	4	5	3	III	O
		American Kestrel	19	2	5 <sup>1</sup>	<u>5</u>	12	4	4	5	3	III	O
		Grasshopper Sparrow	19	3	4	<u>4</u>	11	3	4	2	3	III	O
	Horned Lark	17	2	5 <sup>1</sup>	<u>4</u>	11	4	4	5	4	V	O	
Shrub-scrub	Ia.	Bewick's Wren	35	5	5	5	15	5	5	1	5	V	O
	Ib.	Appalachian subsp.											
		Painted Bunting	27	2	3	4	9	5	1	1	3	V	M
		Eastern subsp.											
		Prairie Warbler	25	5	5	3	13	1	3	2	3	V	O
		Whip-poor-will	22	5	3	3	11	4	3	4	4	V	O
		Field Sparrow	22	5	5	3	13	1	3	2	3	V	O
II.	Northern Bobwhite	21	4	5	3	12	3	2	2	2	III	S	

Table 2 (continued).

Habitat	Priority Entry Criteria	Species	Total PIF Priority Score	Concern Scores <sup>1</sup>				Conservation Action <sup>2</sup>				Optimal, Suitable, or Marginal		
				Area Importance	Population Trend	Breeding Threats	Sum	Survey/ Invent.	Manage.	Monitor.	Resear.		Overall Level	
Southern Pine/ Pine-Hardwood Mix	Ia.	Red-cockaded Woodpecker	29	3	3	5	11	2	2	3	2	I	S	
	Ib.	Bachman's Sparrow	27	3	4	4	11	4	3	4	3	II	O	
		Brown-headed Nuthatch	25	5	3	3	11	2	3	2	3	IV	O	
		Prairie Warbler	25	5	5	3	13	1	3	2	4	V	S	
		Wood Thrush	23	4	3	4	11	2	1	2	3	V	S	
		Worm-eating Warbler	23	2	3	3	8	5	3	5	4	V	S?	
		Whip-poor-will	22	5	3	3	11	4	3	4	4	V	S	
		Field Sparrow	22	5	5	3	13	1	3	2	3	V	O	
		II.	Northern Bobwhite	21	4	5	3	12	3	2	2	2	III	O
			Red-headed Woodpecker	21	3	5	3	11	3	3	2	3	III	S
			Eastern Wood-Pewee	21	5	4	3	12	2	3	2	3	III	O
	Loggerhead Shrike		20	3	5	4	12	4	4	4	3	III	M	
	Summer Tanager		20	5	3	3	11	2	3	2	2	IV	S	
	III.	Chuck-will's-widow	20	4	2	3	9	3	3	4	4	V	O	
	IV.	Northern Flicker	17	5	4	3	12	2	3	2	4	V	S	
	V.	Pine Warbler	19	5	2	2	9	1	1	2	2	VI	O	
	VII.	Hooded Warbler	21	3	3	3	9	3	3	4	3	V	S	
		American Kestrel	19	2	5	5	12	4	4	5	3	III	S	
		Wild Turkey	17	3	2	2	7	2	2	2	2	VI	S	

Table 2 (continued).

Habitat	Priority Entry Criteria	Species	Total PIF Priority Score	Concern Scores <sup>1</sup>				Conservation Action <sup>2</sup>				Optimal, Suitable, or Marginal	
				Area Importance	Population Trend	Breeding Threats	Sum	Survey/ Invent.	Manage.	Monitor.	Resear.		Overall Level
Bottomland Forests/ Riparian	Ib.	Swainson's Warbler	27	3	3	4	10	4	4	5	4	V	O
		Painted Bunting	27	2	3	4	9	5	1	1	3	V	S
		Eastern subsp.											
		Cerulean Warbler	25	2	3	4	9	5	5	1	3	V	S
		Wood Thrush	23	4	3	4	11	2	3	2	3	V	O
		Worm-eating Warbler	23	2	3	3	8	5	3	5	4	V	S
		Prothonotary Warbler	22	3	3	3	9	3	4	4	2	III	O
		Louisiana Waterthrush	22	3	3	3	9	3	3	4	3	V	O
		Kentucky Warbler	22	3	3	3	9	3	3	4	3	V	O
		II.	Red-headed Woodpecker	21	3	5	3	11	3	3	2	3	III
	VI.	Bald Eagle	17	2	3	3	8	4	2	4	2	IV	S
	VII.	Acadian Flycatcher	21	3	3	3	9	3	3	4	3	V	O
		Hooded Warbler	21	3	3	3	9	3	3	4	3	V	O
		Wild Turkey	17	3	2	2	7	2	2	2	2	VI	S
Upland Hardwoods/ Hardwood-Pine Mix	Ib.	Cerulean Warbler	25	2	3	4	9	5	5	1	3	V	S
		Wood Thrush	23	4	3	4	11	2	3	2	3	V	O
		Worm-eating Warbler	23	2	3	3	8	5	3	5	4	V	S
		Whip-poor-will	22	5	3	3	11	4	3	4	4	V	S
		Kentucky Warbler	22	3	3	3	9	3	3	4	3	V	S
	II.	Eastern Wood-Pewee	21	5	4	3	12	2	3	2	3	III	O
		Summer Tanager	20	5	3	3	11	2	3	2	2	IV	O
	IV.	Northern Flicker	17	5	4	3	12	2	3	2	4	V	S
	VII.	Acadian Flycatcher	21	3	3	3	9	3	3	4	3	V	S
		Hooded Warbler	21	3	3	3	9	3	3	4	3	V	O
		Black-throated Green Warbler	20	2	3	4	9	5	3	5	5	V	S?
		Wild Turkey	17	3	2	2	7	2	2	2	2	VI	S

<sup>1</sup>AI or PT score revised from what was derived by BBS data, or lack thereof, based on better local information (as documented in Appendix \_\_); TB scores locally modified are indicated by underlining score.

<sup>2</sup>The level of conservation action is identified by the following criteria:

**SUPPLEMENTAL ACTION SCORES FOR IDENTIFYING SPECIFIC CONSERVATION ACTIONS FOR PRIORITY SPECIES**

<u>CRITERIA</u>	<u>EXPLANATION</u>
<u>SURVEY/INVENTORY SCORE</u>	<b>HOW RELIABLE ARE DATA MEASURING DISTRIBUTION AND HABITAT ASSOCIATION? HIGHER SCORES EQUATE TO MORE DATA NEEDED.</b>
5	Distribution and habitat association is extrapolated from a few localities or knowledge limited to general range maps.
4	Some range limits or habitat associations are known, but local and regional occurrences cannot be predicted accurately.
3	Broad range limits or habitat associations are known, but local occurrences cannot be predicted accurately.
2	Distribution and habitat associations are generally well known and occurrences can be accurately predicted most of the time throughout range.
1	Distribution and habitat associations are well known and occurrences can be accurately predicted throughout the range.

**MANAGEMENT SCORE IS THERE A NEED FOR A GREATER LEVEL OF MANAGEMENT ATTENTION? HIGHER SCORES EQUATE TO MORE MANAGEMENT NEEDED.**

5	None or little directed at species, but management needed.
4	Management mostly related to enforcement of conservation laws, deemed inadequate to ensure population security
3	Some direct or indirect (habitat or ecosystem level) management activities in addition to enforcement of conservation laws and should be continued.
2	Direct management intensively applied to taxon, some additional attention may be needed.
1	None directed at species, with little perceived need.

**SUPPLEMENTAL ACTION SCORES FOR IDENTIFYING SPECIFIC CONSERVATION ACTIONS FOR PRIORITY SPECIES (CONT.)**

<u>CRITERIA</u>	<u>EXPLANATION</u>
<u>MONITORING SCORE</u>	<b>HOW RELIABLE ARE DATA MEASURING POPULATION CHANGE? HIGHER SCORES EQUATE TO MORE MONITORING ATTENTION NEEDED.</b>
5	Population trends not currently monitored, but monitoring needed.
4	Area wide monitoring ongoing, but not with statistical sensitivity.
3	Monitored locally with statistical sensitivity, but not area wide.
2	Area wide monitoring with minimum sample size for statistical sensitivity.
1	Area wide monitoring with statistical sensitivity, nearly complete census, or area wide monitoring deemed unnecessary.
<u>RESEARCH SCORE</u>	<b>HOW WELL UNDERSTOOD ARE FACTORS DETERMINING LIMITS IN POPULATION SIZE AND DISTRIBUTION? HIGHER SCORES EQUATE TO MORE RESEARCH NEEDED.</b>
5	Factors affecting population size and distribution, necessary for effective management, are unknown or unsubstantiated.
4	A few factors affecting population size and distribution are known, but 1 or more factors are unknown hindering management efforts.
3	Some factors affecting population size and distribution are known allowing for some effective management, but 1 or more important factors remain unknown.
2	Most major factors affecting population size and distribution are known allowing for reasonably effective management.
1	All major factors affecting population size and distribution are known <u>or</u> there is little perceived need to discover these factors.

Overall Level of needed conservation action is defined as follows:

1. Crisis recovery(*e.g.*, many but not all endangered species or otherwise non-listed but extremely vulnerable species).
2. Immediate management and/or policy action needed for population stabilization, part of range wide effort (*e.g.*, Bachman's Sparrow, Golden-winged Warbler, Cerulean Warbler).
3. Management to reverse, stabilize, or increase populations in the physiographic area (*e.g.*, Brown-headed Nuthatch, Painted Bunting, Bicknell's Thrush).

4. Long-term planning and responsibility in the physiographic area (*e.g.*, monitoring species with high percent of BBS population, with unclear or stable population trends).
5. Investigations (Survey/Inventory or Research) to better determine status or level of threat (*e.g.*, high scoring but poorly monitored species such as Swallow-tailed Kite, Henslow's Sparrow, Swainson's Warbler, Southern Appalachian populations of boreal forest birds).
6. Monitor potentially encouraging population trends or expansions (*e.g.*, Swainson's Hawk, Prothonotary Warbler, Worm-eating Warbler).

**APPENDIX C**

**Southeast U.S. Waterbird Conservation Plan Species Priorities based on Action Level**

<b>AL/Tot. Score SE US</b>	<b>Species</b>	<b>Res./ Cons. Tier</b>	<b>MO</b>	<b>Perc. of Glob./US-Can. Pop.</b>	<b>BCR's with High Resp. And Interest SE US</b>	<b>Conservation Notes</b>
IM						
28	King Rail	BR/I a		>90/>90	GCP, PENFL, SECP, MAV, WGCP, OP  (Also, Low Responsibility: APPS, PIED)	Vulnerable to losses of freshwater marshes and changes from tall to short varieties in farming rice; undergoing steep declines and range retraction.
28	Yellow Rail	NB/I a	MO2	100/100	GCP, SECP, PENFL  (Also, Low Responsibility: OP, WGCP, MAV)	Little known, but primary wintering habitats consist of savannas, coastal prairies, ricefields, Carolina Bays and artificial but shallow wetlands, all subject to loss or alteration.
24	White Ibis	BR/II b	MO2	~50/100	SECP (44), GCP (26), MAV (17)  (Also, II a: PENFL; II c: OP, WGCP)	Populations across coastal plain from NC to FL and westward to TX.  Estimates of regional breeding population appears to be constant at about 100,000 pairs during the last 20 years, but shifts in geographical distribution has occurred. Collapse of breeding populations in STFL has occurred since the 1930's , with corresponding increases underway in the Carolinas and more recently Louisiana.  The regional population though appearing stable has demonstrated large-scale responses by abandoning deteriorating ecosystems such as in STFL (with altered hydrology) and taking advantage of expanding food resources in relatively distant areas, such as LA GCP (perhaps associated with crawfish aquaculture expansion).  subject to economic conflicts

AL/Tot. Score SE US	Species	Res./ Cons. Tier	MO	Perc. of Glob./US-Can. Pop.	BCR's with High Resp. And Interest SE US	Conservation Notes
23	Horned Grebe	NB/I b	MO2	>10?/>33?	SECP, PENFL, GCP  (Also, Low Responsibility: in all inland BCR's)	Most wintering near coastlines, some recently inland reservoirs; threats considered moderate overall, vulnerable to fishing gear, contaminants.
22	Least Bittern	BR/II a	MO2	>25/>50	GCP (II c), PENFL  (Also, I b: MAV, SECP)	Breeding populations through most of the region outside Appalachians, but overall status unclear outside of GCP and PENFL. Populations north of FL withdraw to the tropics during winter.  Potentially vulnerable to losses of freshwater emergent wetlands.
22	American Bittern	NB/II a	MO2	>33/>33	PENFL, GCP, SECP  (Also, II b: APPS, PIED)	During migration can be found anywhere in the region. Winter populations are concentrated along the coastal plain from NC to FL and westward to TX and Tam.  Vulnerable to loss of freshwater emergent wetlands.
22	Little Blue Heron	BR/I b		~25/>90	MAV (30), GCP (22), WGCP (18), SECP (12), OP (11)  (Also, Low Responsibility: EP, APPS, PIED, TAMB)	Only widespread long-legged wader to be undergoing nearly range wide declines in the region for reasons that are not presently understood. Possible negative interaction with Cattle Egrets that nest about the same time and often are reported to replace this species at many colony sites.  subject to economic conflicts

AL/Tot. Score SE US	Species	Res./ Cons. Tier	MO	Perc. of Glob./US-Can. Pop.	BCR's with High Resp. And Interest SE US	Conservation Notes
21	Green Heron	BR/II a	MO2	>10/>33	PENFL, GCP (IV)  (Also, II a: SECP; IV all inland BCR's)	Occurs commonly region wide, many withdraw from north to south during winter.  Nests in loose colonies or singly, vulnerable to loss of riparian woodlands.  subject to economic conflicts
20 (breed pops.)  17 (non-breed.)	American Coot	BR/ II a		<10/<25 (Breeding)  <25/<33 (Non-breeding)	GCP (IV), PENFL (Breeding)  (Also, II b: SECP)  GCP, PENFL, SECP, MAV, WGCP (Non-breeding)	Scattered breeding populations across the region, but most in FL and TX where apparent declines are most evident.  Vulnerable to freshwater wetland losses.  Major influxes during winter of northern breeding birds, stable overall. Wintering coot populations represent an important connection in the spread of AVM, a disease that is still poorly understood resulting in high mortality of the coots themselves (and waterfowl) as well as Bald Eagles that feed on dead coots, especially in Arkansas, but also Georgia, South Carolina, and North Carolina.  subject to economic conflicts
19	Common Loon	NB/II b	MO2	>25/>33	SECP, PENFL, GCP (IV)	Winters throughout region, principally along Atlantic and Gulf coasts, increasingly inland reservoirs.  Vulnerable to fishing gear and contaminants.

<b>AL/Tot. Score SE US</b>	<b>Species</b>	<b>Res./ Cons. Tier</b>	<b>MO</b>	<b>Perc. of Glob./US-Can. Pop.</b>	<b>BCR's with High Resp. And Interest SE US</b>	<b>Conservation Notes</b>
19 (breed pops.)  17 (non-breed)	Pied-billed Grebe	BR/II b	MO2	<10/<25 (Breeding)  <25/<33 (Non-breeding)	GCP, PENFL (II a), TAMB  (Also, II b: MAV, SECP) (Breeding)  GCP, PENFL, SECP, MAV (Non-breeding)	Breeding populations locally distributed in region, all vulnerable to losses of freshwater wetlands.  Major influxes during winter of northern breeding birds, stable overall. subject to economic conflicts
19	Black-crowned Night-Heron	BR/II a	MO2	>10/>25	GCP (IV)  (Also, II a: SECP, STFL; IV: MAV, PENFL)	Populations scattered across region, no clear concentration areas, many withdraw from north to south during winter.  Nesting colonies vulnerable to loss of riparian woodlands. subject to economic conflicts
21	Yellow-crowned Night-Heron	BR/II a	MO1	>25/80	GCP (II a), MAV (II a), PENFL [STFL; II a])  (Also, II b: WGCP, PENFL; IV: SECP)	Populations scattered across region, no clear concentration areas, outside of LA, TX, and FL. Many withdraw from north to south during winter.  Nesting colonies vulnerable to loss of riparian woodlands.  Foraging specialist on crustaceans. Stable or possibly increasing in LA, but possibly declining in FL and TX  subject to economic conflicts

AL/Tot. Score SE US	Species	Res./ Cons. Tier	MO	Perc. of Glob./US-Can. Pop.	BCR's with High Resp. And Interest SE US	Conservation Notes
20	Tricolored Heron	BR/II c	MO2	~33/>90	GCP (59; IV), SECP (18; II a), MAV (18)  (Also II a: PENFL)	Populations mostly concentrated along Gulf and Atlantic Coasts Regionally about 35,000 pairs.  Generally stable or increasing in region, except SECP and PENFL. Not clear why declines may be underway along south Atlantic coast, but in FL following the same pattern of decline in STFL as other long-legged waders.  subject to economic conflicts
19	Virginia Rail	NB/IV		>33/>33	GCP, SECP, PENFL	Major populations during migration and winter throughout region associated with emergent wetlands and rice fields.
18	Eared Grebe	NB/IV	MO2	<1/10-25	GCP, OP, EP, TAMB	Larger wintering concentrations in areas west of Mississippi River, scattered individuals found east of Mississippi River almost all in freshwater habitats. Occasionally breeds in TX.  Subject to economic conflicts
18	Sora	NB/IV		>33/>33	GCP, SECP, PENFL	Major populations during migration and winter throughout region associated with emergent wetlands and rice fields.
17	Least Grebe	BR/IV	MO1	<1/>95	TAMB, GCP	Status unclear, but characteristic of open ponds and emergent wetlands in extreme s TX.
16	Great Egret	BR/IV		>20/>90	SECP (24), GCP (22), MAV (21), PENFL (14; II a), WGCP (12)	Resident across most of region outside of Appalachians, numbers augmented during winter from more northern breeding populations. Most indications suggest this species after severe declines from millinery trade is stable and increasing across most of region, exceptions in PENFL and central Gulf coast of TX. Regionally about 120,000 pairs.  Like most colonial long-legged waders, declines evident in STFL, but unlike many species declines also in PENFL are evident.  Vulnerable to colony disturbance and among the most commonly requested species for depredation permits related to fish hatcheries and aquaculture.  subject to economic conflicts

AL/Tot. Score SE US	Species	Res./ Cons. Tier	MO	Perc. of Glob./US-Can. Pop.	BCR's with High Resp. And Interest SE US	Conservation Notes
16	Snowy Egret	BR/IV		>10/>50	GCP (37), MAV (24), SECP (15)  (Also, IV: WGCP, PENFL)	Common generally along coastal plain from NC to FL and then west to TX and Tam., occurring inland along Mississippi River westward into AR and OK. Northern populations withdraw to the southern areas during winter. Species stable and increasing most of region after severe declines from millinery trade into early 1900's. Regionally about 50,000 pairs.  Vulnerable to colony disturbance and among the most commonly requested species for depredation permits related to fish hatcheries and aquaculture.  subject to economic conflicts
14	Great Blue Heron	BR/IV		>20/>25	SECP (39), MAV (20), WGCP (15)  (Also, II a: PENFL)	Common throughout region, less so along coasts during summer. Northern populations withdraw to southern areas during winter. Stable and increasing, exceptions central and south Gulf coast of TX and PENFL. Regionally about 70,000 pairs.  Vulnerable to colony disturbance and among the most commonly requested species for depredation permits related to fish hatcheries and aquaculture.  subject to economic conflicts
14	Glossy Ibis	BR/IV		<1/>50	SECP (44), PENFL (29; II a), MAV (26)	Apparently spread from the eastern Hemisphere to the western Hemisphere during the mid-1800's becoming established first in the West Indies. Virtually unknown in FL prior to the 1930's, but from the 1940's to 1970's exploded in numbers and range along Atlantic coast north to Maine. More recently expansion west to LA and TX coastlines, overlapping White-faced Ibis populations that are expanding eastward. Regionally about 3,500 pairs.  Generally increasing across most of range, but in FL peaked in 1970's and is undergoing declines since, with major declines in STFL. Also possibly declining SACP.  subject to economic conflicts
PC						

AL/Tot. Score SE US	Species	Res./ Cons. Tier	MO	Perc. of Glob./US-Can. Pop.	BCR's with High Resp. And Interest SE US	Conservation Notes
14 (breed)  18 (non-breed)	Double-crested Cormorant			1/1 (breeding)  >50/>50 (non-breeding)	PENFL (75), SECP (20) (breeding)  MAV, SECP, GCP, WGCP, PENFL (non-breeding)	Breeding principally in FL and north along Atlantic coastlines. Species was largely absent as a breeder inland during most of 1900's, due to both shooting and contaminants, but recent establishment of small inland nesting colonies in MS, LA, and AR are generally in historically known breeding areas; similar recent breeding in Piedmont may be new to region in historical times. Regionally about 10,000 pairs.  Since 1970's, hundreds of thousands now winter in SE US. In MAV and other inland areas the subject of major controversies involving depredation of both sport and aquaculturally raised fish.  subject to economic conflicts
13	Cattle Egret	BR/IV		>10/>80	OP (22), WGCP (22), GCP (18), SECP (17), MAV (10)  (Also, IV: PENFL)	Expansion from eastern Hemisphere to western Hemisphere during early 1900's. From South America through West Indies to FL during mid-1900's. Abundant by 1960's and has spread across region and beyond to becoming the most abundant long-legged "wader" in North America. This species feeds primarily on insects and terrestrial vertebrates rather than fish and crustaceans. Regionally, over 300,000 pairs.  Species forms huge colonies, often in urban-suburban areas and is subject to public complaints, resulting in depredation concerns. In addition, some suggestion that this species may disrupt nesting of Little Blue Herons, often replacing this species over time at many colony sites, but this has not been proven (except that Little Blue Heron is the only long-legged wader to appear to be declining over most of range in SE US).  subject to health and safety conflicts

**\*Definitions:**

**WL=WatchList** score used for Continental Scoring (PIF Approach); species with WL scores of 14 or more, or with 13 with PT=5 are identified. using formula: Total Continental Score = PT + PS + maximum of (BD or ND) + maximum of (TB or TN). Reflects conservation status of species relative to the entirety of North America.

## Tier=

- I. Continental Conservation Interest (Continental WatchList): (a) Species with multiple causes for concern across their entire range; (b) Moderately abundant or widespread species with declines or high threats, and (c) Species with restricted distributions or low population size.
- II. Regional Conservation Interest (non-WatchList;  $TOT \geq 19$ ): (a) high regional concern ( $AI+PT \geq 8$ ); (b) high regional threats ( $TB+TN \geq 7$ , or  $TB$  or  $TN=5$ ), (d) taxa (subspecies and populations) of regional conservation interest not otherwise included in categories above; (c) high regional responsibility (as measured by percent of global, continental, or regional populations).
- III. Additional Stewardship Interest: (a) Federally listed and (b) State listed, with  $AI \geq 2$ .
- IV. Local concern or interest, with  $AI \geq 2$ .

**Regional Total Score** of all seven factors used for identifying Tiers for which species best fits for conservation planning at Planning Region/Bird Conservation Region/Physiographic Area:  $PT$ =Regional Population Trend;  $PS$ =Global Population Size,  $BD$  and  $ND$ =Global Breeding and Non-breeding Distribution, respectively;  $TB$  and  $TN$ =Regional Breeding and Non-breeding Threats, respectively;  $AI$ =Area Importance (“relative” relative abundance for the species for each area within range scaled against its maximum relative abundance; i.e., the BCR or physiographic area supporting the highest relative abundance). Total Score possible is 35.

**Percent of global/U.S.-Canada population supported in Planning Region**, that is percent of populations within planning region with respect to global population estimates (Delany and Scott 2002, Kushlan et al.2002) and temperate North America (U.S.-Canada) and within bird conservation region and physiographic area with respect to planning region estimates (based on collective estimates among State waterbird conservation coordinators).

**Action Level** at present based on expert opinion, but ultimately rules based on scores would be preferable, as with landbirds (PIF).

$IM$ =Immediate management needed to reverse or stabilize significant, long-term population declines in species with small populations, or to protect species with the smallest populations for which trends are poorly known. Lack of action may lead to extirpations or extinction.

$MA$ =Management or other on-the-ground conservation actions needed to reverse or stabilize significant, long-term population declines in species that are still relatively abundant.

$PR$ =Long-term Planning and Responsibility needed for species to ensure that sustainable populations are maintained for species for which a region has high responsibility for that species.

$PC$ =Population Control/Suppression needed for species that are otherwise secure and increasing that may come into conflict with other species of higher conservation concern or other resources of interest.

## Monitoring Needs Categories

**No Trend Data (MO1)** - These species are found on fewer than 14 BBS routes continentally (or 6 routes regionally) and do not have other identified range-wide trends. Thus, they have inadequate trend data.

**Poor Trend Data (MO2)** - These are species for which (1) we do have BBS trends but those trends have high variance (large 95% confidence intervals) and therefore a relatively poor ability to detect a 50% decline over 30 years, or (2) we assigned a PT score based on Christmas Bird Count trend graphs or other available local information.

**Inadequate Geographic Coverage (MO3)** - These species have BBS trend data but less than 2/3 of their North American (Canada + U.S.) range is covered by the BBS. Thus, significant regional population declines might go undetected.

### **Bird Conservation Regions**

EP (BCR 20): Edwards Plateau (TX)

OP (BCR 21): Oaks and Prairies (TX, OK)

WGCP (BCR 25): West Gulf Coastal Plain-Ouachita Mountains (OK, AR, TX, LA)

MAV (BCR 26): Mississippi Alluvial Valley (IL, MO, KY, TN, MS, AR, LA)

SECP (BCR 27): Southeastern Coastal Plain (KY, TN, LA, MS, AL, FL, GA, SC, NC, VA)

SACP: South Atlantic Coastal Plain (VA, NC, SC, GA, FL east of Apalachicola watershed)

EGCP: East Gulf Coastal Plain (KY, TN, LA, MS, AL, FL west of Apalachicola watershed)

APPS (BCR 28): Appalachians (AL, TN, KY, WV, OH, GA, SC, NC, VA, MD, PA, NY, NJ); many distinct physiographic areas with emphasis

here on the Southern Appalachians including Southern Blue Ridge, Southern Ridge and Valley and Southern Cumberland Plateau, Northern Cumberland Plateau, (less emphasis on Mid Atlantic Ridge and Valley and Allegheny Mountains, and Ohio Hills). With the exception of Great Blue Heron and Green Heron found throughout this BCR, almost all species treated here when recorded in the Appalachians are mostly restricted to the Southern Ridge and Valley especially along the Tennessee River Valley (AL, TN, GA)

PIED (BCR 29): Piedmont (AL, GA, SC, NC, VA, MD, PA, NJ) with emphasis here on Southern Piedmont (AL, GA, SC, NC)

PENFL (BCR 31); Peninsular Florida (FL)

PENFL: Peninsular Florida, essentially north of Lake Okeechobee (Fort Myers and northward on Gulf side, Fort Lauderdale on Atlantic side) on to northern extent of black mangrove on both coasts and Florida scrub.

STFL: Subtropical Florida, essentially south from Lake Okeechobee (Fort Myers and Fort Lauderdale) to include Florida Keys, Dry Tortugas

TAMB (BCR 36): Tamaulipan Brushlands (TX, Tam.)

GCP (BCR 37): Gulf Coastal Prairies (LA, TX)

LA: Louisiana including both Deltaic and Chenier Plains

UTX: Upper Texas Coast from Sabine River to East Matagorda Bay

CTX: Central Texas Coast from east Matagorda Bay to Baffin Bay

STX/Tam.: South Texas Coast from Baffin Bay (Tamaulipan Prairies, Laguna Madre, Padre Island) south into Tamaulipas, Mexico.

BCR's considered to have high responsibility for species conservation were determined for breeding species by having input from all state cooperators on estimated population sizes (numbers of pairs) for each BCR in their state, then totaled across states, and then taking a percentage of all pairs estimated for the region. All BCR's supporting at least 10% of all breeding pairs within the region are identified above in decreasing order. For breeding species where there are not breeding population size estimates and for species principally occurring only as non-breeding populations, estimates are best guesses based on range maps within the Southeast.

## APPENDIX D

### Protected Bird Species in Georgia

Date of information - 6/11/2003  
15 birds on this list

Find details for the birds on this list at [NatureServe](http://NatureServe).

Scientific Name	Common Name	State Status (what's this?)	Federal Status (what's this?)
<i>Aimophila aestivalis</i>	Bachman's Sparrow	R	
<i>Campephilus principalis</i>	Ivory-billed Woodpecker	E	LE
<i>Charadrius melodus</i>	Piping Plover	T	(LE,LT)
<i>Charadrius wilsonia</i>	Wilson's Plover	R	
<i>Corvus corax</i>	Common Raven	R	
<i>Dendroica kirtlandii</i>	Kirtland's Warbler	E	LE
<i>Elanoides forficatus</i>	Swallow-tailed Kite	R	
<i>Falco peregrinus</i>	Peregrine Falcon	E	(PS:LE)
<i>Haematopus palliatus</i>	American Oystercatcher	R	
<i>Haliaeetus leucocephalus</i>	Bald Eagle	E	(PS:LT,PDL)
<i>Mycteria americana</i>	Wood Stork	E	(PS:LE)
<i>Picoides borealis</i>	Red-cockaded Woodpecker	E	LE
<i>Sterna antillarum</i>	Least Tern	R	(PS:LE)
<i>Sterna nilotica</i>	Gull-billed Tern	T	
<i>Thryomanes bewickii</i>	Bewick's Wren	R	
<i>Vermivora bachmanii</i>	Bachman's Warbler	E	LE

NOTE: This is a working list and is constantly revised ([see element occurrence data disclaimer](#)). For the latest changes, acknowledgment of numerous sources, interpretation of data, or other information connected with this list, please contact:

## APPENDIX E

### US Fish and Wildlife Service Species of Conservation Concern (2002) in the Piedmont (BCR 29)

*Peregrine Falcon*  
Black Rail  
Upland Sandpiper  
Chuck-will's-widow  
Whip-poor-will  
Bewick's Wren  
Wood Thrush  
Prairie Warbler  
Cerulean Warbler  
Prothonotary Warbler  
Swainson's Warbler  
Kentucky Warbler  
Bachman's Sparrow  
Henslow's Sparrow  
Rusty Blackbird