FINAL DRAFT

Avian Conservation Implementation Plan
Ninety Six National Historic Site

National Park Service
Southeast Region

Compiled by J. Keith Watson
U.S. Fish and Wildlife Service
In cooperation with

NISI Resource Management Staff, National Park Service
And Bird Conservation Partners
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Introduction

This Avian Conservation Implementation Plan (ACIP) is provided to the staff at Ninety Six National Historic Site (NISI) 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 and the Cumberland Plateau 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 NISI is primarily upland forest, recommendations will be provided in the ACIP for landbird and habitat conservation and will be derived from the appropriate PIF bird conservation plans, PIF being largely a landbird conservation initiative. However, all high priority bird conservation issues for NISI will be discussed and integrated as appropriate.

Information and data presented in the ACIP have been obtained from several sources: 1) interviews with NISI staff, 2) the PIF Southern Piedmont Bird Conservation Plan, (Cooper 2000), 3) peer reviewed bird conservation and management literature, and 4) NPS databases. This plan has been reviewed by NISI resource management staff and managers, Cumberland/Piedmont Inventory and Monitoring Network (CUPN I&M) staff, and bird conservation partners and approved by NISI 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.

NISI is not obligated to undertake any of the proposed actions in this plan. The plan is provided to offer guidance to NISI to voluntarily support important park, regional, and perhaps national and international bird conservation projects for which NISI 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, economic, social, 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 non-governmental 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 NISI 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 Polices (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). 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 Kennesaw Mountain National Battlefield Park, 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 (USDI 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

This Revolutionary War site, located near the town of Ninety Six, South Carolina, preserves the frontier village of Ninety Six and the earthworks associated with its role as a British outpost. It was the scene of repeated confrontations between loyalists and patriots, and one of the longest sieges of the war conducted by the Continental Army. Through the mid-18th century, Ninety Six was the economic and political center of the region. It supposedly was named by traders for the distance between Charleston and the Cherokee town of Keowee.

The site is 400 ha (162 acres), comprised primarily of mixed woods, riparian areas along Spring Branch, and some grassy areas, particularly around the earthworks. Bottomland forest along Ninety Six Creek contains white oak, water oak, willow oak, shagbark hickory, sweetgum, and sycamore. Oak-hickory forest dominates the upland

slopes. Star Fort Lake is an 11 ha impoundment within the Site. Other water resources include Little Pond and several springs in the Spring Branch area. Other communities include open grassy fields, a slash pine plantation, and abandoned early-seral fields.

Avian Resources of the 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, Appalachee, 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.

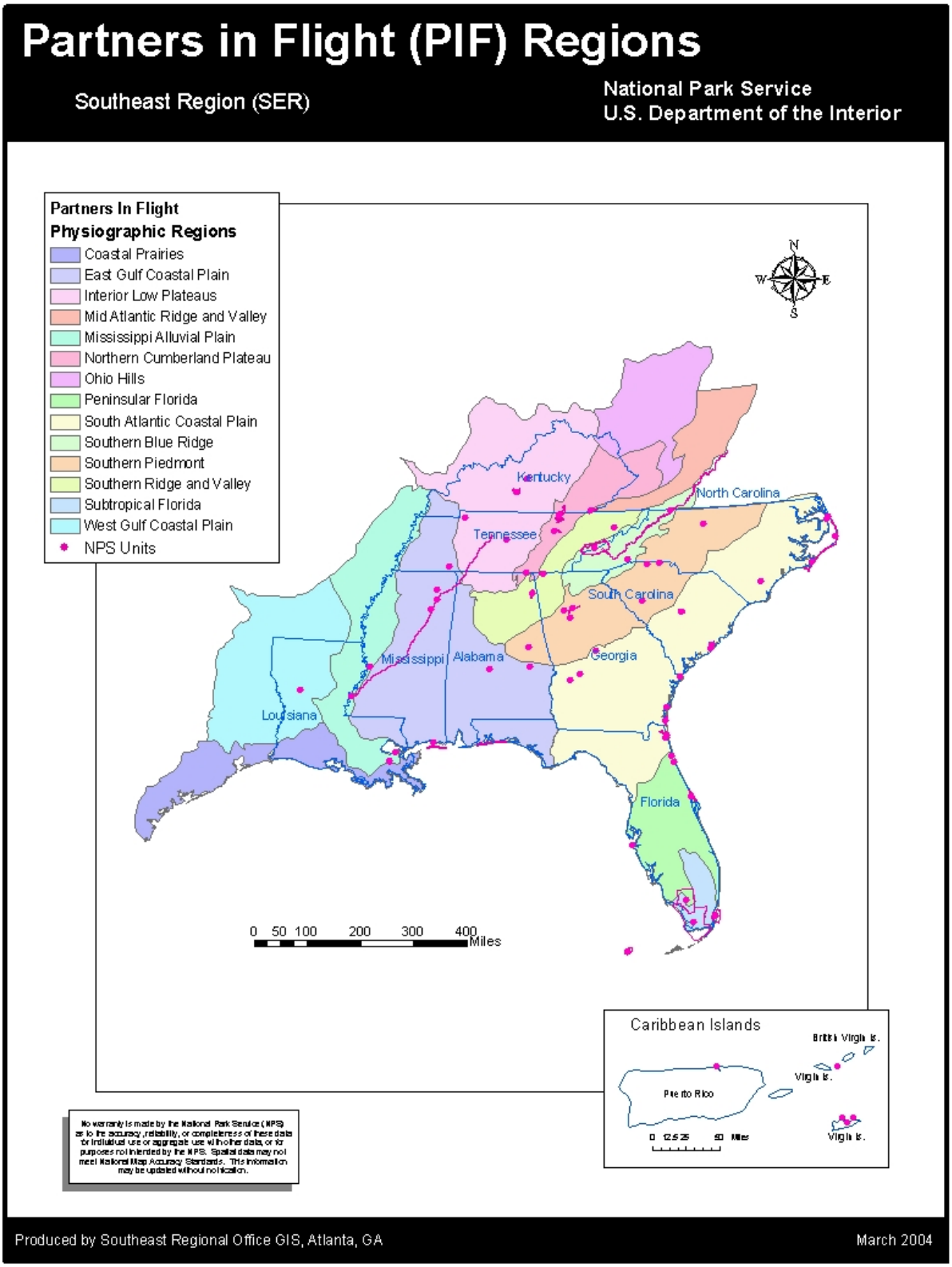
The primary potential natural forest vegetation in the Southern Piedmont is oak-hickory-pine and Southern mixed forests. The distribution of the oak-hickory-pine forest type includes the Southern Cumberland Plateau and Ridge and Valley physiographic area of Georgia and Alabama, the Piedmont, a majority 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, and


Partners in Flight (PIF) Regions
Southeast Region (SER)
National Park Service
U.S. Department of the Interior
Partners In Flight
Physiographic Regions
Coastal Prairies
East Gulf Coastal Plain
Interior Low Plateaus
Mid Atlantic Ridge and Valley
Mississippi Alluvial Plain
Northern Cumberland Plateau
Ohio Hills
Peninsular Florida
South Atlantic Coastal Plain
Southern Blue Ridge
Southern Piedmont
Southern Ridge and Valley
Subtropical Florida
West Gulf Coastal Plain
NPS Units
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W
E
S
Kentucky
North Carolina
Tennessee
South Carolina
Mississippi
Alabama
Georgia
Louisiana
Florida
0 50 100 200 300 400
Miles
Caribbean Islands
British Virgin Is.
Virgin Is.
Puerto Rico
Virgin Is.
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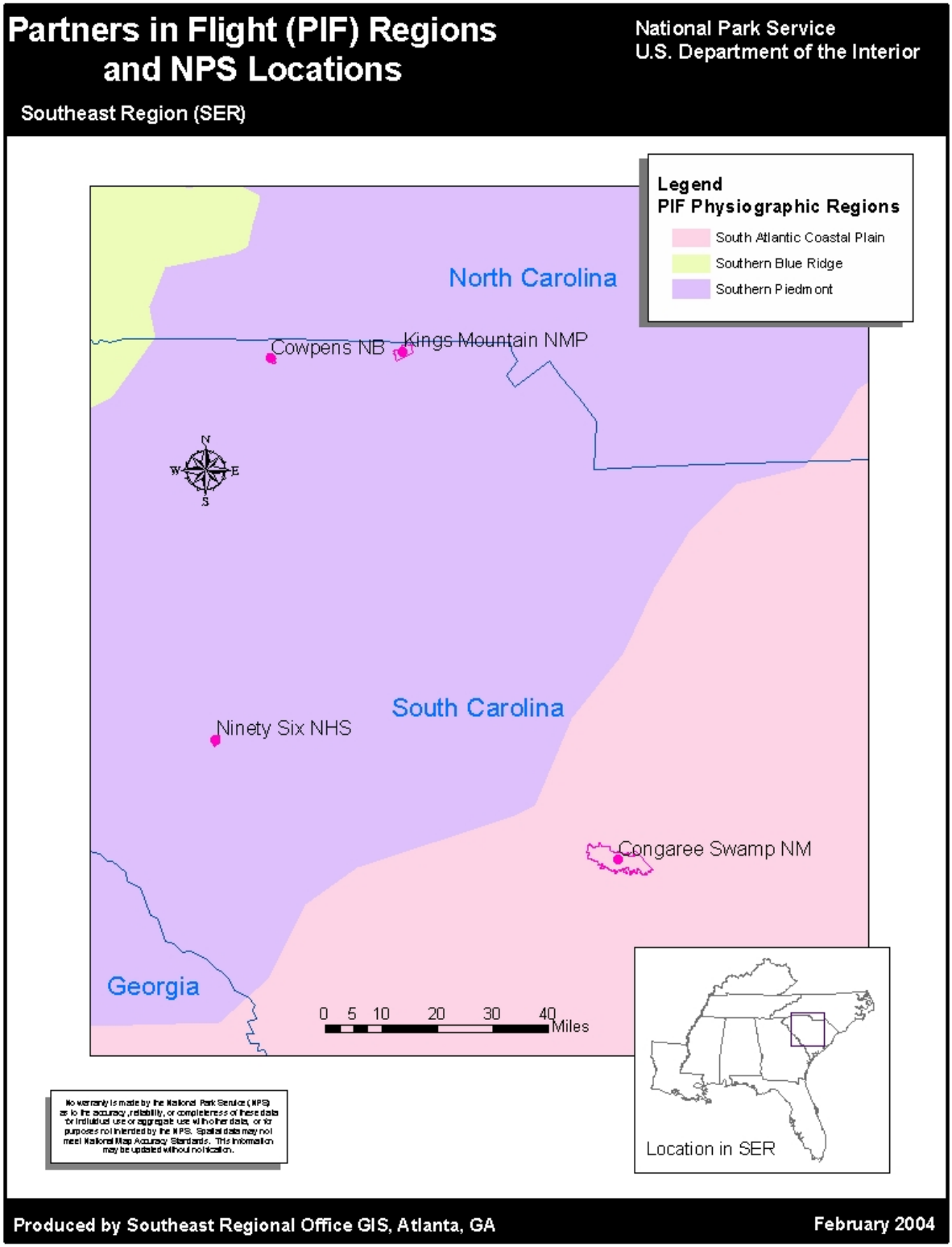
March 2004


Partners in Flight (PIF) Regions and NPS Locations
Southeast Region (SER)
National Park Service
U.S. Department of the Interior
Legend
PIF Physiographic Regions
South Atlantic Coastal Plain
Southern Blue Ridge
Southern Piedmont
North Carolina
Cowpens NB
Kings Mountain NMP
South Carolina
Ninety Six NHS
Congaree Swamp NM
Georgia
0 5 10 20 30 40 Miles
Location in SER
Produced by Southeast Regional Office GIS, Atlanta, GA
February 2004

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.

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 NISI

Avian Biodiversity: NISI has an avian inventory but it is considered incomplete according to the goals of the NPS I&M program. A checklist of these birds is not available for the public. NISI has confirmed over 100 species in the park (USDI NPS 2000) and over 50 of these likely breed in the park. Additional inventory effort is likely to confirm and yield additional species.

Verified records of birds in NISI have been entered into the NPS I&M program's database, NPSpecies, and may be viewed via the internet at http://www.nature.nps.gov/im/app/npspp with a user identification and password combination authorized by the NPS for NPS personnel and NPS cooperators. Many other avian observational data need to be verified and entered into the database.

Park Priorities: Park staff has not identified any species of management concern or high priority for conservation. Rather, park staff is concerned about conserving all birds and their habitats in NISI. However, the park does operate both Eastern Bluebird and Wood Duck nest box programs.

Inventory: Bird inventory data provide important information for park management, and an avian inventory at NISI is being conducted within the framework of the NPS I&M Program. Results to date indicate NISI as an excellent breeding area of many common birds of the Piedmont including several high priority species. Results to date suggest that many common Piedmont birds (including several high priority species) breed at NISI.

Threatened and Endangered Species: No Federally listed threatened or endangered species are known to occur in NISI.

One South Carolina Rare, Threatened, or Endangered Bird Species, the Northern Bobwhite is known to regularly occur in NISI.

The high priority PIF species (for the Southern Piedmont) that likely occur as breeders in NISI (see below and Appendixes A-B) include Wood Thrush, Prairie Warbler, Eastern Wood-Pewee, Pine Warbler, Prothonotary Warbler, Summer Tanager, Acadian Flycatcher, Eastern Meadowlark, and Field Sparrow. Many high priority Neotropical migrants regularly pass through the park as well. Upon completion of the inventory, the number of high priority species known to breed or winter in the park is likely to increase.

Monitoring: Currently, no known avian monitoring projects are being conducted at NISI.

Research: Scientific research is permitted within the park, but no active avian research is ongoing.

Outreach: No outreach or educational programs related to birds are undertaken in the park.

Park Identified Needs for Avian Conservation

NISI has identified the need to:

- acquire a baseline inventory that describes distribution and relative abundance of birds in the park

- establish a long term monitoring program that can measure status of species of concern

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, NISI 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).

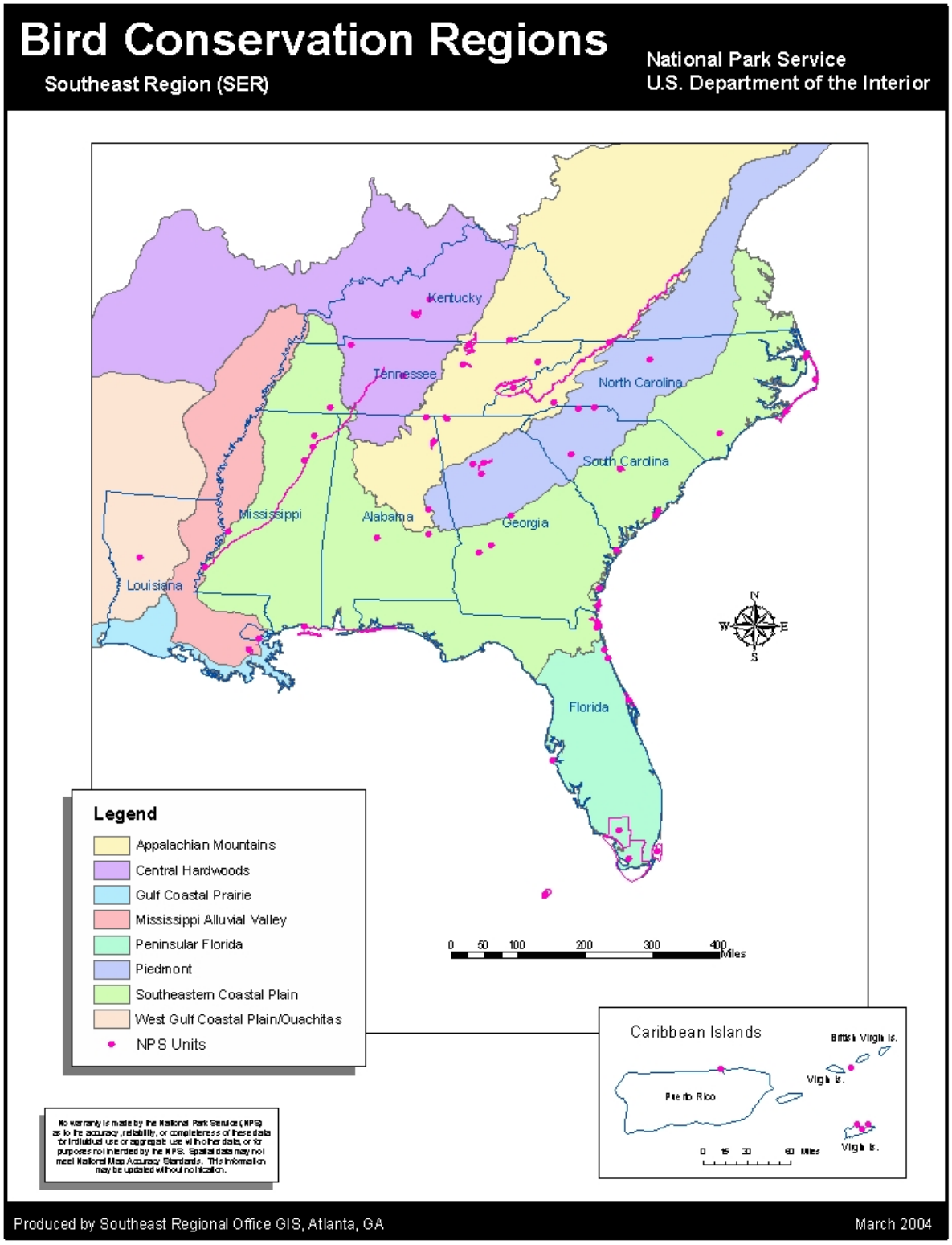
Several NABCI BCR's have coordinators whose primary responsibility is to coordinate all bird conservation planning in the BCR, across all agencies and organizations. Currently, the Piedmont BCR does not have a designated coordinator; however, a bird conservation coordinator for the Appalachian Mountains BCR can provide valuable assistance to NISI with implementation of aspects of this ACIP.

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 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, though this is 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. NISI being largely a landbird park will utilize this plan more than any other plan to participate in NABCI implementation.

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 South Carolina does not currently have a PIF coordinator. However, US Fish and Wildlife Biologists and non-game biologists in South Carolina are available and can be instrumental in assisting NISI to implement recommendations identified in this ACIP and projects important to bird conservation relative to South Carolina'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


Bird Conservation Regions
Southeast Region (SER)
National Park Service
U.S. Department of the Interior
Kentucky
Tennessee
North Carolina
South Carolina
Mississippi
Alabama
Georgia
Louisiana
Florida
N
W
E
S
Legend
Appalachian Mountains
Central Hardwoods
Gulf Coastal Prairie
Mississippi Alluvial Valley
Peninsular Florida
Piedmont
Southeastern Coastal Plain
West Gulf Coastal Plain/Ouachitas
NPS Units
0 50 100 200 300 400 Miles
Caribbean Islands
British Virgin Is.
Virgin Is.
Puerto Rico
Virgin Is.
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2004. Since NISI 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/). Few waterbird conservation priorities exist on the Southern Piedmont and none are presented here for NISI.

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 to 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, Responsibilities of Federal Agencies to Protect Migratory Birds (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: The park inventory is being conducted in cooperation with the I&M program. 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. Following completion of baseline inventory NISI is encouraged to:

- **conduct inventories during all seasons in all habitats***

- **determine distribution and abundance of high priority species (as identified in the Southern Piedmont bird conservation plan)***

- **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 avian monitoring program in place. Close coordination with adjacent BCR coordinators and the South Carolina 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 systematically collect 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:

- **establish a permanent monitoring program to track changes in high priority species***

- **establish a migration monitoring program to document use of NISI during spring and fall migrations***

- **work with the Augusta-Aiken Audubon Society, (http://home.comcast.net/~ehoward24/) or Columbia Audubon Society (http://www.columbiaaudubon.org/) to establish a Christmas Bird Count for the park and surrounding area***

- **enter data into the appropriate database (NPSpecies, National Point Count Database, eBird (Cornell Lab. Ornith. 2002 (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)**

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 (USDI 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 NISI 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 NISI can greatly contribute to established habitat goals identified in the Southern Piedmont bird conservation plan. The park is primarily mixed woods, riparian areas along Spring Branch, and some grassy areas, particularly around the earthworks. Bottomland forest along Ninety Six

Creek contains white oak, water oak, willow oak, shagbark hickory, sweetgum, and sycamore. Oak-hickory forest dominates the upland slopes. Other communities include open grassy fields, a slash pine plantation, and abandoned early-seral fields.
Much of this habitat provides suitable area and vegetative cover for nesting landbirds, but could be improved through use of prescribed fire and other management techniques to restore natural native habitats and forest structure required of many high priority bird species that occur there. Specific recommendations are to:

- **restore landscape conditions to that at the time of the Revolutionary Period, restoring native grasses and creating an open oak woodland savannah habitat***

- **maintain and manage other forested acreage to old growth conditions, implementing management techniques to create structural complexity needed for high priority species in these areas***

- **convert Slash Pine plantation to native communities such as Longleaf Pine/Wiregrass habitat***

- **consider the use of prescribed fire to restore and maintain forest structure and grasslands and development of savanna habitat***

- **contact Natural Resource Conservation Service (NRCS) conservationists to develop program of land protection and conservation on private lands adjacent to the park***

- **protect existing snag trees, where not identified as a safety hazard, as important to cavity nesting birds***

- **document all major habitat management activities, including the 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, pesticide use on adjacent lands, exotic plants and feral animals, and local manufacturing effects on air quality 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 (for undeveloped adjacent lands, contact NRCS)***

- **continue to work with county officials to establish suitable zoning implementation that would enhance park protection and integrity of resources***

Impact of exotic species on birds at NISI is largely unquantified, yet domestic dogs 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 pubic 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 NISI (Altman 2002, Harrison 2002).

Although no significant exotic plants species are negatively impacting habitat at NISI, 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 NISI area. Until an EPMT is established that can provide assistance to NISI, 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:

- **work with the NRCS and local landowners to protect and enhance quality of stream water and flows of Ninety Six and Henley Creeks within the park***

- **prohibit future installation of communications towers in the park and work with adjacent landowners to place future towers well away from this site***

- **work with local manufacturing and regional land and resource planners to address air quality issues and potential impacts in the park***

Research

- **list park needs and projects on Research Permit and Reporting System web site (RPRS)**

- develop contact with Southeast Cooperative Ecosystem Studies Unit (CESU) at the University of Georgia, Athens, GA

Compliance: Park compliance with the Migratory Bird Treaty Act and the Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (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 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

- **prepare a bird checklist for public availability***

- **participate in International Migratory Bird Day (IMBD) events with a local partner (http://birds.fws.gov/imbd.html) such as the Augusta-Aiken or Columbia Audubon Societies***

- **consider enhancing visibility of bird conservation issues through organized bird walks, owl prowls, raptor watches, etc.***

- **offer a bird field guide in the visitor center for the public***

- **encourage accurate documentation from recreational birding outings (see Cornell University's eBird monitoring program)***

- **work with adjacent landowners and neighbors, the local community, and pubic 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/conssbcof3.htm)***

- park interpretation/education staff are encouraged to attend USFWS training on Migratory Bird Education at NCTC

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:

- **continue to keep abreast of Greenwood County initiatives that could impact park resources***

- **cooperate with South Carolina Department of Natural Resources to collaborate on implementation of various aspects of this plan***

- **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 NISI and potentially improve water and habitat quality in the vicinity

- **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 Augusta-Aiken or Columbia Audubon Societies 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. NISI 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. Needed at NISI is:

- **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, or PIF Coordinator to learn how this program might be applicable to implementation of this plan, and other park wetland issues. NISI is within a region which has the operational Atlantic Coast Joint Venture and coordination with their staff will provide opportunity to investigate use of this funding source and developing 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. NISI is encouraged to:

- **become a member of the Savannah-Santee-Pee Dee 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 have 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 NISI are:

US Fish and Wildlife Service

Keith Watson
Asheville, NC
828-350-8228
Appalachian Mountains
Keith_Watson@fws.gov

Dean Demarest
Nongame Bird Coordinator
Atlanta, GA
404-679-7371
dean_demarest@fws.gov

Chuck Hunter
Regional Refuge Biologist
Atlanta, GA
404-679-7130
Chuck_Hunter@fws.gov

Craig Watson
Atlantic Coast Joint Venture
Charleston, SC
843-727-4707 x16
Craig_Watson@fws.gov

Joe Cockrell
Private Lands Biologist
Charleston, SC
843 727-4707
Joe_Cockrell@fws.gov

Laura Fogo (Co-Team Leader)
Savannah-Santee-Pee Dee Ecosystem Team
Wadesboro, NC 28170
704-694-5534
Laura_Fogo@fws.gov

National Park Service

John Yancy
Natural Resource Stewardship
and Science
Atlanta, GA 30303
404-562-3279
John_Yancy@nps.gov

Eric Williams
Ninety Six National Historic Site
Ninety Six, SC
864 543-4068
Eric_Williams@nps.gov

Teresa Leibfreid
Cumberland/Piedmont I&M
Network Coordinator
Mammoth Cave, Kentucky
(270)758-2135
Teresa_Leibfreid@nps.gov

Chris Furqueron
Exotic Plant Management Coordinator
404-562-3113 ext 540
Chris_Furqueron@nps.gov

South Carolina

John Cely
Wildlife Biologist
Columbia, SC
jcely@CLEMSON.EDU
803-419-9645

Anna Huckabee
Wildlife Biologist
803-734-5534
annah@scdnr.state.sc.us

Other

Robert Hudson
South Carolina Wildlife Services
Columbia, SC 29203
803-786-9455
robert.l.hudson@aphis.usda.gov

Robin Carter
Columbia Audubon Society
rcarter@sc.rr.com

Joe Meyers
University of Georgia
Athens, GA
706 542-1882
joe_meyers@usgs.gov

Brian Stoddard
District Conservationist
864-229-2805 x 104
brian.stoddard@sc.usda.gov

Carol Eldridge
Augusta-Aiken Audubon Society
larrycarole@mindspring.com

Dan Tufford
Columbia Audubon Society
803-777-3292
dtufford@bellsouth.net

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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[1]	Species	Total PIF Priority Score	Concern Scores: Area Importance	Concern Scores: Population Trend	Percent of BBS Population	Migratory Status[2]	Local Geographical or Historical Notes
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[1]	Species	Total PIF Priority Score	Concern Scores: Area Importance	Concern Scores: Population Trend	Percent of BBS Population	Migratory Status[2]	Local Geographical or Historical Notes
IV.	Eastern Meadowlark	18	4	5		D	
	Northern Flicker	17	5	4		D	
	Blue Jay	17	5	5	5.2	D	
	Common Grackle	15	4	5		D	
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	
	Hooded Warbler	21	3	3	3.2	B	
	Barn Owl	20	2	5[4]		D	
	Black-throated Green Warbler	20	2	3		B	Uwharrie Mountains, NC
	American Kestrel	19	2	5[4]		D	
	Grasshopper Sparrow	19	3	4		D	
	Wild Turkey	17	3	2		R	
	Horned Lark	17	2	5[4]		D	

[1]Entry criteria:

Ia. **Overall Highest Priority Species.** Species with total score 28-35. Ordered by total score. Consider deleting species with AI $\leq$ 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 $\leq$ 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^2, >10% in physiographic areas >200,000 km^2) 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).**

[2] 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.**

[3]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.

[4]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 neede (supplemental action scores as identified in Draft Southeast Species Prioritization document, February 10, 1998).

Priority Habitat	Entry Criteria	Species	Total PIF Priority Score	Concern Scores[1] Area Importance	Population Trend	Breeding Threats	Sum	Conservation Action[2] Survey/ Invent.	Manage.	Monitor.	Resear.	Overall Level	Optimal, Suitable, or Marginal
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[1]	5	12	4	4	5	3	III	O
		American Kestrel	19	2	5[1]	5	12	4	4	5	3	III	O
		Grasshopper Sparrow	19	3	4	4	11	3	4	2	3	III	O
		Horned Lark	17	2	5[1]	4	11	4	4	5	4	V	O
Shrub-scrub	Ia.	Bewick's Wren Appalachian subsp.	35	5	5	5	15	5	5	1	5	V	O
	Ib.	Painted Bunting Eastern subsp.	27	2	3	4	9	5	1	1	3	V	M
		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).

Priority Habitat	Entry Criteria	Species	Total PIF Priority Score	Concern Scores[1] Area Importance	Population Trend	Breeding Threats	Sum	Conservation Action[2] Survey/ Invent.	Manage.	Monitor.	Resear.	Overall Level	Optimal, Suitable, or Marginal
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[1] Area Importance	Population Trend	Breeding Threats	Sum	Conservation Action[2] Survey/ Invent.	Manage.	Monitor.	Resear.	Overall Level	Optimal, Suitable, or Marginal
Bottomland Forests/ Riparian	Ib.	Swainson's Warbler	27	3	3	4	10	4	4	5	4	V	O
		Painted Bunting Eastern subsp.	27	2	3	4	9	5	1	1	3	V	S
		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	S
	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

[1]**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.**

[2]**The level of conservation action is identified by the following criteria:**

SUPPLEMENTAL ACTION SCORES FOR IDENTIFYING SPECIFIC CONSERVATION ACTIONS FOR PRIORITY SPECIES

CRITERIA	EXPLANATION
SURVEY/INVENTORY SCORE	**HOW RELIABLE ARE DATA MEASURING DISTRIBUTION AND HABITAT ASSOCIATION? HIGHER SCORES EQUATE TO MORE DATA NEEDED.**
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.)

CRITERIA	EXPLANATION
MONITORING SCORE	**HOW RELIABLE ARE DATA MEASURING POPULATION CHANGE? HIGHER SCORES EQUATE TO MORE MONITORING ATTENTION NEEDED.**
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.**
RESEARCH SCORE	**HOW WELL UNDERSTOOD ARE FACTORS DETERMINING LIMITS IN POPULATION SIZE AND DISTRIBUTION? HIGHER SCORES EQUATE TO MORE RESEARCH NEEDED.**
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 or 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).

Table 3 (under each habitat discussion in Section 3) . Determine status of habitat availability:

1. Identify threats.

2. Land use patterns.

3. Management options.

4. Conservation issues (including potential conflicts with other high priority habitats or species suites).

Table 4 (also within Section 3 under each habitat discussion). Biological requirements of each species within each suite (*i.e.*, microhabitat requirements necessary for setting population objectives), identify focal (umbrella) species, and prioritize actions for habitat.

APPENDIX C

South Carolina Rare, Threatened & Endangered Bird Inventory

ENDANGERED

Peregrine Falcon
Bachman's Warbler
Bewick's Wren
Eskimo Curlew
Ivory-billed Woodpecker
Kirtland's Warbler
Red-cockaded Woodpecker
Bald Eagle
Swallow-tailed Kite
Wood Stork
Piping Plover

THREATENED

Common Ground-Dove
Least Tern
Wilson's Plover

SPECIAL CONCERN

American Bittern
Little Blue Heron
Glossy Ibis
Black Skimmer
American Oystercatcher
Gull-billed Tern
Black Rail
Purple Gallinule
Am Kestrel (breeding popn. only)
Northern Bobwhite
Barn Owl
Black-throated Green Warbler (coastal "Wayne's" race)
Loggerhead Shrike
Painted Bunting
Henslow's Sparrow
Loggerhead Shrike

APPENDIX D

US Fish and Wildlife Service Species of Conservation Concern 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