

FINAL DRAFT

Avian Conservation Implementation Plan Fort Pulaski National Monument

National Park Service
Southeast Region



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In cooperation with

FOPU Resource Management Staff, National Park Service
And Bird Conservation Partners
January 2005

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Introduction

This Avian Conservation Implementation Plan (ACIP) is provided to the staff at Fort Pulaski National Monument (FOPU) 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, coastal parks in the South Atlantic Coastal Plain will have a variety of high priority conservation needs that are derived from all of the above plans. Similarly, because FOPU has a mixture of habitats, recommendations will be derived mainly from the existing PIF Southeast Coastal Plain and WCA bird conservation plans. However, all high priority bird conservation issues for FOPU will be discussed and integrated as appropriate.

Information and data presented in the ACIP have been obtained from several sources: 1) interviews with FOPU staff, 2) peer reviewed bird conservation and management literature, and 3) the PIF South Atlantic Coastal Plain Bird Conservation Plan, Version 1.0 (Hunter et al. 2001). This plan has been reviewed by FOPU resource management staff and managers, Southeast Coast Network Inventory and Monitoring (SEC I&M) staff, and bird conservation partners and approved by FOPU management. Optimally, this plan will be incorporated into the park's Resource Management Plan (RMP) and updated annually to reflect completed projects, newly identified needs, and shifts in bird conservation priorities in the region.

FOPU is not obligated to undertake any of the proposed actions in this plan. The plan is provided to offer guidance to FOPU to voluntarily support important park, regional, and perhaps national and international bird conservation projects for which FOPU 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, 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)* 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 FOPU 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). 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, Fort Frederica National Monument), 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 (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

Fort Pulaski National Monument is located in Chatham County, Georgia along the Savannah River only a few miles from its junction with the Atlantic Ocean. The site consists of two islands that were, before human intervention, primarily salt marsh. Cockspur Island probably supported some coastal hammock forest or woodland. It was selected for fortification as early as the seventeen hundreds. In the 1800's, as part of development of the site for defense, the island was modified by the installation of drainage canals and a dike system. In later years, the site was also impacted by the deposition of spoil material. The addition of dredge material from the Savannah River to Cockspur Island has continued until recently. During the civil war period, the vegetation was removed to enhance visibility and kept in early successional stages. Since the abandonment of the fort in the late eighteen hundreds, a large portion of central Cockspur Island has reverted to maritime forest. Currently the upland portions of Cockspur (105 ha; 260 acres) support a mosaic of maritime forest, maritime shrub communities, maintained grasslands and successional spoil deposit areas. It also includes over 138 ha (340) acres of tidal shrubland and tidal herbaceous marsh (USDI NPS 2000).

McQueens Island makes up the largest portion of land holdings for the National Monument (about 1983 ha; 4,900 acres) and the majority of this consists of salt marsh.

A railroad was constructed along the northern edge of the island in 1887 to connect the city of Savannah with Tybee Island and operated until 1933. In 1923, US Highway 80 was constructed, occupying a location across the central portion of the island and adjacent the old railroad grade along the eastern section. In 1994 Chatham County converted the abandoned railroad right-of-way to a multipurpose hiking trail. Both the highway and the converted rails-to-trails areas support ruderal habitat for a number of coastal plain herbaceous species. Other upland habitat on McQueens Island occurs in association with a public fishing and boat ramp on the eastern end of the island and an abandoned section of US 80 leading to the Bull River (USDI NPS 2000).

The natural resources at FOPU face a number of threats, primarily related to its proximity to the city of Savannah. Heavy industrial development on the Savannah River, as far upstream as the Savannah River Site near Aiken, SC, have been known to impact the water quality and ecological health in and around the park. Pollutant levels in water, sediment, and invertebrate tissue will be analyzed as part of an upcoming study. Shipping traffic and associated dredging are contributing to increased shoreline erosion along the north shore of Cockspur Island. Finally, Highway 80 between Savannah and Tybee Island is slated for widening in the near future, impacting park wetlands adjacent to the existing roadway. The Monument is currently working with the U.S. Fish and Wildlife Service, the Federal Highways Administration, and the Georgia Department of Transportation to develop a mitigation plan that complies with NPS Wetlands Policies (USDI NPS 2000).

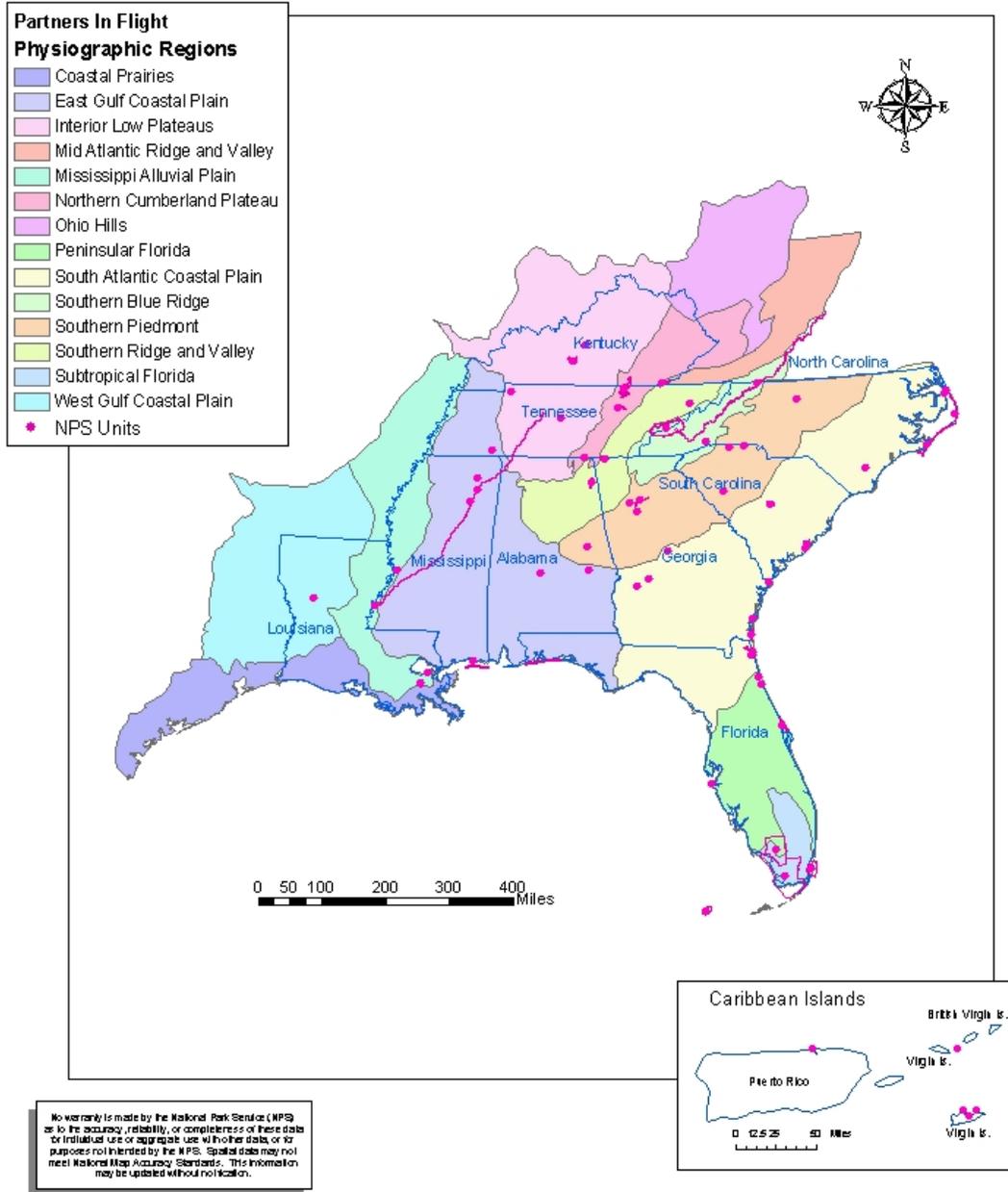
Avian Resources of South Atlantic Coastal Plain

The South Atlantic Coastal Plain, consisting of about 10.1 million ha (25 million acres), includes parts of Virginia, North Carolina, South Carolina, Georgia, Alabama and Florida (see PIF and NPS location maps below). This physiographic area is one of four coastal plain divisions recognized by Partners in Flight. Although these coastal plain areas share many conservation issues, differences in key species and habitats exist. For instance, the South Atlantic Coastal Plain includes (1) the largest forested floodplains outside of the Mississippi Alluvial Plain, (2) unique non-alluvial wetlands (Dismal Swamp, pocosins, Carolina Bays, Okefenokee Swamp), (3) the largest remnants of the former longleaf pine dominated ecosystems (especially flatwoods and sandhills, and to a lesser extent savannas), (4) the best remaining examples of "natural" barrier and sea islands and maritime forests in the Southeast, and (5) biologically rich Apalachicola Bluff forests. Also present within this physiographic area are extensive tidal wetlands and commercial forests. Physical characteristics include a predominantly flat, weakly dissected alluvial plain with active fluvial deposition and shore zone processes along coastlines. Elevation ranges from 0 feet increasing towards the fall line to 600 feet. Major blackwater rivers (with headwaters in the coastal plain) include Chowan, Waccamaw, Satilla, St. Mary's, Suwanee, and St. John's (originating in Peninsular Florida). Major brownwater rivers (with headwaters originating in the Southern Piedmont or Southern Blue Ridge) include Roanoke, Tar, Neuse, Cape

Partners in Flight (PIF) Regions

Southeast Region (SER)

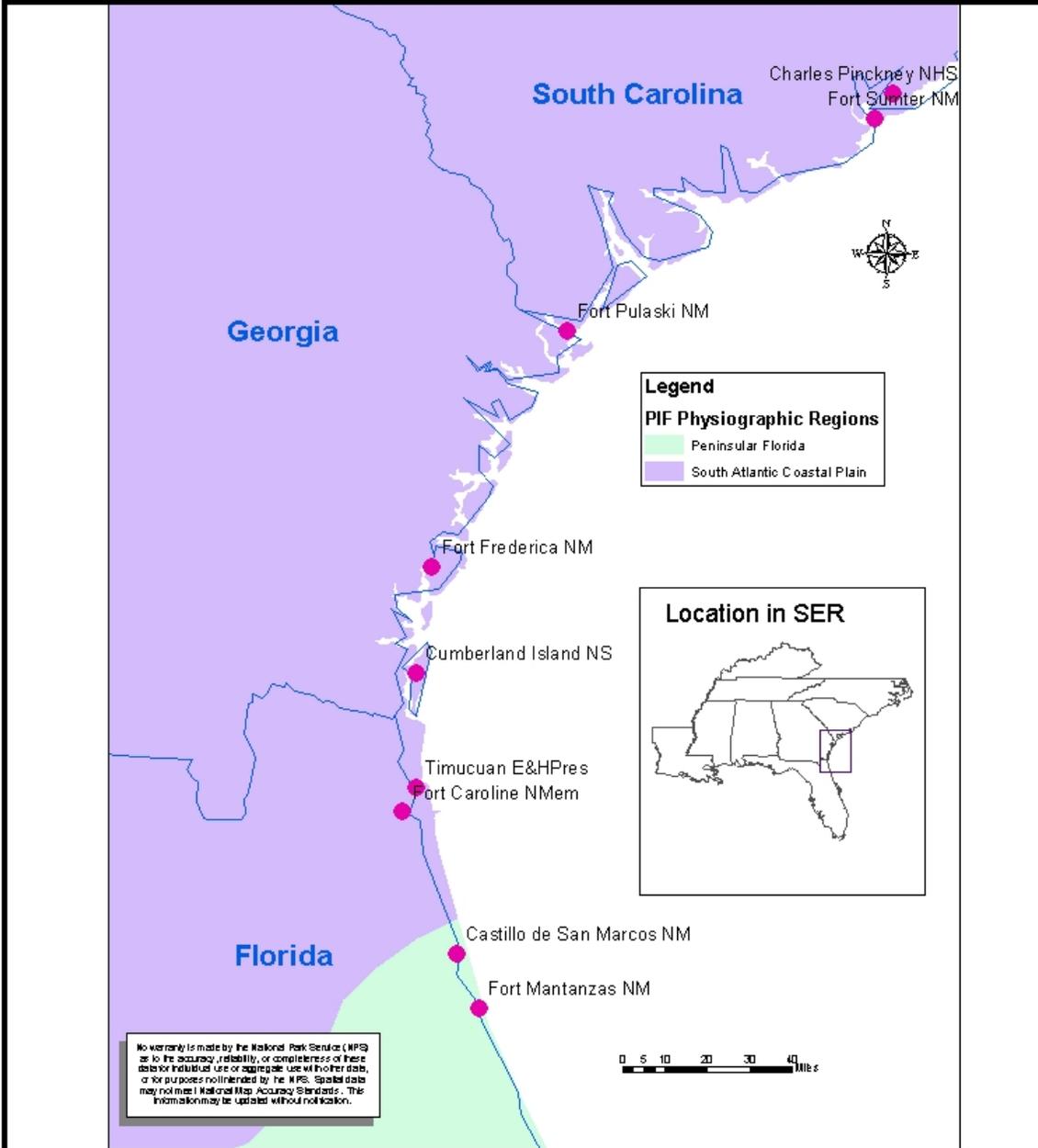
National Park Service
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Partners in Flight (PIF) Regions and NPS Locations

Southeast Region (SER)

National Park Service
U.S. Department of the Interior



Produced by Southeast Region GIS, Atlanta, GA

November 2003

Fear, Pee Dee, Santee-Cooper, Ashepoo-Combahee-Edisto (ACE), Savannah, Ogeechee, Altamaha, and Apalachicola (Chattahoochee and Flint). Average annual precipitation is 40-60 inches except on the Florida Gulf Coast where it is 52-64 inches.

Land conversion for both agricultural and urban expansion has resulted in a 40 percent loss of natural vegetation (closer to 65 percent along some coastlines) in this physiographic area. Potential natural vegetation (i.e., absent frequent disturbances) is referred to as "southern mixed" forests and oak/hickory/pine, with intervening southern floodplain forest and pocosins, as well as live oak/sea oats along coastlines. However, disturbances are frequent and therefore, upland forests historically were characterized by open pine (predominantly longleaf) forests. Today, predominant vegetation remains slash (Florida) and longleaf pines, with loblolly pine becoming common nearer to the Southern Piedmont and the northern portions of this physiographic area. Oak/gum/cypress forest cover type is common along floodplains and prevalent species include laurel oak, water tupelo, swamp tupelo, swamp chestnut oak, cherrybark oak, and baldcypress. Pond pine and Atlantic white cedar become important within the Lower Coastal Plain, especially in pocosin and other non-alluvial wetland types. Live oak becomes important along coastal areas and frequently is included with other coastal pines and hardwoods in various types of "hammocks."

Within the South Atlantic Coastal Plain, fire is the single most important driving disturbance force. Natural burns occur over medium to large size areas between natural barriers (e.g., floodplains, other wetlands) with moderate frequency and low intensity. Fires most often occurred during the growing season, in many cases started by lightning, and were essential for supporting numerous plant communities and dependent animals, including many bird species. In addition to fire, hurricanes, tornadoes, and floods are frequent as disturbance agents. Ice storms, though rare, are devastating where they occur. Finally, southern pine beetles are important disturbance agents.

Over 300 bird species occur annually in the South Atlantic Coastal plain as nesting, post nesting dispersers, transients, and /or wintering residents. Among these species, the South Atlantic Coastal Plain supports critically important populations for a number of extremely high priority bird species. Species in need of the greatest conservation attention include Henslow's Sparrow, Wood Stork, Bachman's Sparrow, Swallow-tailed Kite, Swainson's Warbler, Eastern Painted Bunting, Black-capped and Bermuda Petrels, Red-cockaded Woodpecker, Southeastern American Kestrel, Wayne's Black-throated Green Warbler, Saltmarsh Sharp-tailed Sparrow, Red Knot, Piping Plover, and Snowy Plover (Gulf Coast). Other priority species also of conservation interest include Florida Sandhill Crane, White Ibis, Loggerhead Shrike, Cerulean Warbler, Prothonotary Warbler, Seaside Sparrow, Brown-headed Nuthatch, American Woodcock, Northern Bobwhite, Common Ground-Dove, Yellow-throated Warbler, Rusty Blackbird, Black Skimmer, Least Tern, Black Rail, Peregrine Falcon, Bald Eagle, American Oystercatcher, Red-throated Loon, and most migrating and wintering shorebirds and rails, Brant, American Black Duck, Lesser and Greater Scaup, Tundra Swan, and Wood Duck.

Avian Conservation in FOPU

Avian Biodiversity: FOPU has an avian inventory and a checklist available for the public that lists almost 210 species. Recent inventory work under the I&M program should provide managers with updated and almost complete presence/absence data for birds in FOPU. Status of many species in the park is needed.

Verified records of birds in FOPU 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 and consultants have identified Painted Bunting as a species of management concern and high priority for conservation. Additionally, park staff is concerned about conserving all birds and their habitats in FOPU. However, several species are likely to occur in FOPU that are high priority on the South Atlantic Coastal Plain and conservation efforts in the park could focus on these species or groups of species.

Inventory: A complete inventory has been recognized as important information for park managers and is considered complete within the framework of the NPS I&M Program. FOPU is one of several parks in the NPS Southeast Coast I&M Network for which a plan to conduct high priority inventory projects has been prepared (USDI NPS 2000).

Threatened and Endangered Species: No known Federally listed species are known to nest in FOPU. The Federally endangered Wood Stork is a regular summer visitor to the park and the threatened Bald Eagle and Piping Plover are winter visitors at the park.

Several George Protected Bird Species are known to occur in the park (Appendix C) and include American Oystercatcher, Wilson's Plover, Least Tern, Swallow-tailed Kite, and Peregrine Falcon.

Several high priority PIF species for the South Atlantic Coastal Plain occur in FOPU (see below and Appendixes A and B) and include Painted Bunting, Brown Pelican, Northern Parula, Clapper Rail, and Field Sparrow, Willet, Yellow-billed Cuckoo, and Chuck-will's Widow as breeders and Red Knot, Salt Marsh Sparrows, Seaside Sparrow, Whimbrel, White Ibis, LeConte's Sparrow, and Black-bellied Plover as winter visitors or migrants.

Monitoring: Currently, no known avian monitoring projects are being conducted at FOPU. However, due to the importance of coastal areas for bird conservation, it is likely that a Christmas Bird Count is conducted in the area that may cover all or portions of the park.

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

Outreach: Ogeechee Audubon Society conducts regular bird walks in the park. No additional educational and outreach programs related to birds are undertaken in the park.

Park Identified Needs for Avian Conservation

FOPU has identified the need to conduct additional marshbird inventory and monitoring as an important step to improving natural resource management at the park.

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, FOPU is within the NABCI Southeastern Coastal Plain BCR which extends from Virginia south to northern Florida and west to Louisiana north to western Kentucky, following the Atlantic and Gulf coastal plains (see NABCI 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 Southeastern Coastal Plain does not have a designated coordinator; however, a large portion of the BCR lies within the Atlantic Coast Joint Venture area (Maine to Florida and includes Puerto Rico) and the ACJV has several professional bird conservationists based throughout the region to assist partners in bird conservation efforts (see contacts below). This staff can provide valuable assistance to FOPU with implementation of aspects of this ACIP.

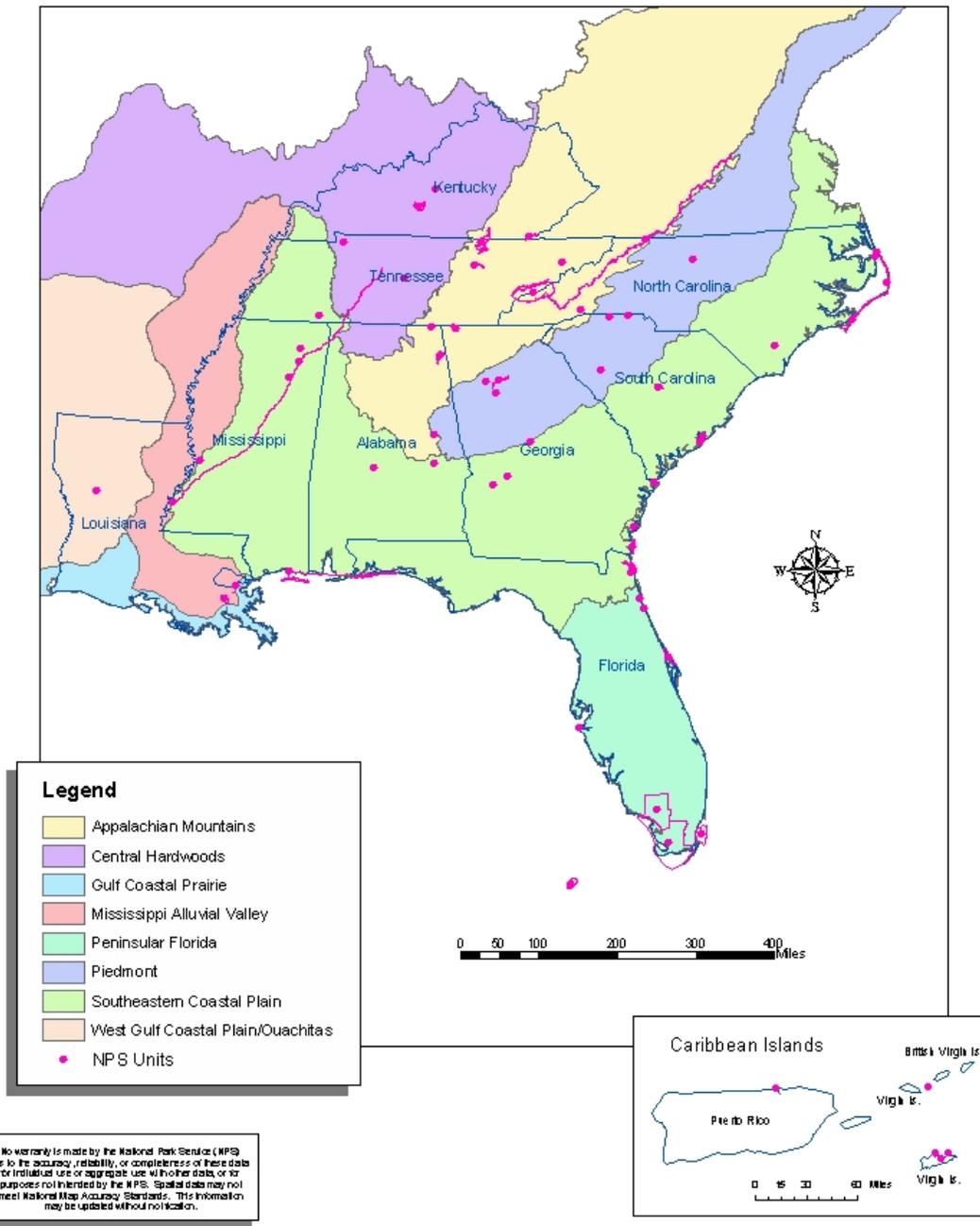
North American Waterfowl Management Plan (NAWMP): The NAWMP (<http://northamerican.fws.gov/NAWMP/nawmphp.htm>) is completed and has been revised several times, incorporating updated goals and strategies based on new information. This plan is one of the most successful bird conservation delivery programs in the United States, being monetarily supported by the North American Wetlands Conservation Act (NAWCA) and focused primarily on wetland and waterfowl protection, but increasingly these funds have also been utilized for upland non-game species protection.

Partners In Flight: Goals and strategies for the South Atlantic Coastal Plain (SACP) can be found in the draft bird conservation plan, previously submitted to the park. The current plan identifies priority bird and habitat conservation goals that must be implemented in order to achieve bird conservation success in this region. FOPU being a coastal park with landbird and waterbird groups well represented will utilize the SACP bird conservation plan to a great extent.

Bird Conservation Regions

Southeast Region (SER)

National Park Service
U.S. Department of the Interior



Produced by Southeast Regional Office GIS, Atlanta, GA

March 2004

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 currently does not have a PIF coordinator, but non-game biologists with the Georgia Department of Natural Resources can be instrumental in assisting FOPU to implement recommendations identified in this ACIP and projects important to bird conservation relative to Georgia's role in implementation of the SACP 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.

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/>). A regional step down plan is in preparation by FWS personnel and should be available in 2004.

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: FOPU has a complete inventory. However, information regarding the status of high priority species (as identified in the South Atlantic Coastal Plain bird conservation plan, the Georgia Protected Bird Species, and the USFWS Species of Conservation Concern) is needed to effectively structure park management for the continued preservation and enhancement of the park's avifauna and habitats. An identified need at FOPU is to:

- **conduct inventory in marsh habitats during all seasons***

Additionally, FOPU is encouraged to:

- **partner with Georgia Department of Natural Resources (DNR) and the Ogeechee Audubon Society (<http://www.ogeecheeaudubon.org/>) to coordinate area inventory efforts***
- **consult with Georgia DNR to determine if a Christmas Bird Count (CBC) includes the park***
- **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. Following inventory, 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/mbcg/groups.htm>. Coordination with the Atlantic Coast Joint Venture Coordinator and Georgia Wildlife Resources Division staff is needed to further 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. Specific recommendations are to:

- **cooperate with Georgia DNR and Atlantic Coast Joint Venture to establish appropriate monitoring programs for threatened and endangered species, Georgia Protected Species, and high priority PIF species and specifically**
 - **establish a Painted Bunting monitoring program**
 - **establish a marshbird monitoring program**
- **partner with Ogeechee Audubon Society to implement various monitoring programs**
- **determine if a CBC includes the park and if so, work with the CBC coordinator to distinguish park data from non-park data; if no CBC is conducted in the area, work with the Coastal Georgia Audubon Society to establish a CBC centered in the park***
- 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. In the coastal environment of the Outer Banks of North Carolina, for example, excavation of drainage ditches, a constructed dune system, housing and commercial developments, and road construction have resulted in a barrier island system that now only marginally resembles the historic nature of the barrier island system. 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. This is no exception for FOPU.

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 FOPU 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 are subject to a wide variety of threats, both inside and outside of the park, and habitats 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 for the enjoyment of future generations.

The park is largely a vast salt marsh habitat with some upland habitats and shoreline along the Savannah River. Much of this habitat provides suitable area and vegetative cover for nesting landbirds, but could be improved through use of techniques to improve and/or restore forest and marsh conditions for birds that utilize these habitats at FOPU. Specific recommendations are to:

- **preserve maritime forest for resident landbirds, Neotropical migratory birds for breeding and migration stopover***
- **prevent future loss of any salt marsh and mitigate for any wetland loss due to widening of Highway 80 through the park**
- **reintroduce historic disturbances such as fire to the landscape to improve habitat structure and productivity, especially in salt marshes and maritime forests***
- **restore hydrology to marshes where needed**
- **develop a landscape management plan**
- **protect existing snag trees, where not identified as a safety hazard, as important to cavity nesting birds**
- **enhance water quality to support aquatic biota necessary to support existing aquatic invertebrates and fish as food sources for waterbirds**
- **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

- assess historic landscape cover and determine feasibility of restoring landscape within the context of the park's enabling legislation

Threat Management: FOPU has not identified significant threats to bird populations in the park. However, mitigation of several general threats will improve conditions for birds and other wildlife in the park. The park is strongly encouraged to:

- **work with the local community and Georgia DNR to address water pollution or water quality contamination in the area due to industrial pollutants and on the Savannah River***
- **develop monitoring and management program for exotic plants and animals in the park**
- **assess impact of military aircraft overflights on avifauna and other natural resource of the park**
- **assess impact of jet skis and other recreational uses of the shoreline on the parks avifauna**
- **mitigate wetland loss due to highway construction through the park**
- **determine effects of dredge spoil placement on shoreline use by shorebirds**
- **prevent future installation of towers of any kind**

Research

- **determine use of maritime habitats for Neotropical migratory breeding, resting, and foraging.**
- **list park needs and projects on Research Permit and Reporting System web site (RPRS)**
- **develop contact with 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. Compliance recommendations include:

- **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 Ogeechee Audubon Society, and Georgia Wildlife Resources Division***
- **participate in the Colonial Coastal Birding and Nature Festival***
- **continue as active partner in Georgia's Colonial Coast Birding Trail***
- **encourage development of outreach and educational programs to enhance visibility of bird conservation issues, which may include organized bird walks in the maritime forest and salt marshes***
- **offer a bird field guide to visitors in the visitor center***
- **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>)***
- **encourage accurate documentation and reporting from recreational bird outings by visitors (see Cornell University's eBird monitoring program (Cornell Lab. Ornith. 2002 (<http://www.ebird.org/about/index.jsp>))***
- 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:

- **develop and strengthen relationship with Ogeechee Audubon Society for potential cooperation and implementation of segments of this plan***
- **develop partnerships with Georgia Wildlife Resources Division staff to develop cooperative projects for bird conservation***
- **continue to keep abreast of local initiatives or programs that could impact park resources***
- **participate in the active conservation of birds and habitats with the South Atlantic Migratory Bird Initiative (SAMBI), an Atlantic Coast Joint Venture initiative***
- **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 South Atlantic Coastal Plain bird conservation 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. Funding for conservation projects for Neotropical migrants is available through the Park Flight program. FOPU is encouraged to enter all high priority projects into the NPS Performance Management Information System (PMIS) database. Needed at FOPU 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 to facilitate implementation of these programs. The Atlantic Coast Joint Venture is very active in bird conservation in the South Atlantic Coastal Plain and are a primary contact for potential funding (<http://www.acjv.org>) Additional information regarding Joint Ventures can be found at:

(<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.

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. FOPU is encouraged to:

- **become a member of the Altamaha Ecosystem Team of the US Fish and Wildlife Service**

One largely 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 \$4 million 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 FOPU are:

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LITERATURE CITED

- Barden, L.S. 1997. Historic Prairie in the Piedmont of North and South Carolina, USA. *Natural Areas Journal* 17:149-152.
- Brawn, J.D., S.K. Robinson and F. R. Thomson III. 2001. The Role of Disturbance in the Ecology and Conservation of Birds. *Annu. Rev. Ecol. Syst.* 32:251-76.
- Cornell University and National Audubon Society. 2002. eBird Monitoring Program. Cornell University, Laboratory of Ornithology, Ithaca, NY.
- Fancy, S. and J. Sauer. 2000. Recommended Methods for Inventorying and Monitoring Landbirds in National Parks. National Park Service, Ft. Collins. 13p.
- Hunter, C. 2000. Bird Population Survey, Inventory, and Monitoring Standards for National Wildlife Refuges and Partners in the Southeastern U.S. USFWS. January 2002. 49p.
- Hunter C., D. Buehler, R. Canterbury, J. Confer, and P. Hamel. 2001. Conservation of disturbance-dependent birds in eastern North America. *Wildlife Society Bulletin* 29:440-455.
- Hunter, W. C., L. Peoples, and J. Collazo. 2001. Partners in Flight Bird Conservation Plan for the South Atlantic Coastal Plain (Physiographic Area 03). American Bird Conservancy, May 2001. 166p.
- Neotropical Migratory Bird Conservation Act. 2000. 114 Stat. 593. 16 U.S.C. 6102 Public Law 106247, enacted July 20, 2000.
- North American Wetlands Conservation Act. 1989. 103 Stat. 1968; 16 U.S.C. 4401-4412. Public Law 101-233, enacted December 13, 1989.
- Sauer, J.R., J.E. Hines, I. Thomas, J. Fallon, and G. Gough. 2000. The North American Breeding Bird Survey, Results and Analysis 1966-1999. Version 98.1, U.S.G.S. Patuxent Wildlife Research Center, Laurel, MD.
- Southeast Natural Resource Leaders Advisory Group (SENRLAG). 2000. A Strategy for Collaboration. Unpublished. 4p.
- USDI, National Park Service. 1916. Organic Act. 39 Stat. 535 16 U.S.C. 1-4, enacted August 25, 1916.
- USDI, National Park Service. Resource Management Plan, Fort Pulaski National Monument.

USDI, National Park Service. 2000. Southeast Coastal Inventory and Monitoring Network Draft Study Plan. December 2000. 148p.

USDI, National Park Service. 2001. National Park Service Management Policies. 2001. December 2000. 137p.

USDI, National Park Service. 2002. Park Flight and Migratory Bird Conservation. National Park Service, Natural Resource Program Center. 2p.

US Government. 2000. Presidential Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, January 2000.

US NABCI Committee. 2000. The North American Bird Conservation Initiative in the United States: A Vision of American Bird Conservation. U.S. NABCI Committee, September 2000. 29p.

Williams, G.W. 2002. Aboriginal Use of Fire: Are There Any "Natural" Plant Communities? USDA Forest Service, Washington D.C., June 2002. 18p.

APPENDIX A

HIGH PRIORITY SPECIES IN THE SOUTH ATLANTIC COASTAL PLAIN
BIRD CONSERVATION REGION

(From Hunter et al. 2001, Table 1. Priority bird species for South Atlantic Coastal Plain:

Priority Entry Criteria ¹	Species	Total PIF Priority Species Score	Score		Percent of BBS Population	Local Migratory Status ²	Geographical or Historical Notes
			Area Importance	Population Trend			
1a.	Bewick's Wren	35	5	5		C	Nearly extinct
	Appalachian						
	Kirtland's Warbler ⁵	35	5	5		A	Mostly SC, GA
	Black-capped Petrel	32	5	5		P	Concentrations off NC
	Bermuda Petrel ⁵	32	2	5		P	Increasingly regular off NC
	Red Knot	32	5	5		C	Mostly GA, FL
	South Atlantic						
	Red-cockaded Woodpecker ⁵	32	5	4	80.4*	R	
	Snowy Plover	31	3	5		D	St. Joseph Peninsula to Dog Island, FL Gulf
	Southeast						
	Painted Bunting	31	5	5		B	GA, SC, n. FL, se NC
	Eastern						
	Roseate Tern ⁵	30	3	4		A	Highly Pelagic
	North American						
	Black-throated Green Warbler	30	5	4	100.0*	B	VA, NC, SC
	Wayne's (Coastal)						
	Bachman's Sparrow	30	5	5	36.6*	R	Primarily breeding
	Saltmarsh Sharp-tailed Sparrow	30	5	3		C	
	Wood Stork ⁵	29	4	4	44.3?	D	FL, GA, se SC
	Southeast						
	Henslow's Sparrow	29	5	4		D	Winters FL, GA, SC(?), breeding ne NC, se VA
	Swallow-tailed Kite	28	4	3	10.8	B	SC, GA, FL
	North American						
	American Kestrel	28	5	4		D	
	Southeastern						

Priority Entry Criteria ¹	Species	Total PIF Priority Species Score	Score		Percent of BBS Population	Local Migratory Status ²	Geographical or Historical Notes	
			Area Importance	Population Trend				
	Piping Plover ⁵	28	4	4		D	Mostly winter, breeding possibly SC	NC,
	American Oystercatcher North American	28	5	3		D		
lb.	Short-tailed Hawk Florida	27	2	3		B	St. Marks to Lower Suwannee, FL	
	Black Rail	27	4	4		D		
	Sandhill Crane Florida	27	3	3		R	FL, GA	
	Brown-headed Nuthatch	27	5	5	38.7*	R		
	Nelson's Sharp-tailed Sparrow	27	3	3		C		
	Audubon's Shearwater Caribbean	26	5	3		P		
	Yellow Rail	26	4	3		C		
	Wilson's Plover	26	4	3		D	Mostly breeds, irregular in winter in GA, FL	
	Bicknell's Thrush	26	5	3		A		
	Swainson's Warbler	26	4	1	15.9	B		
	Seaside Sparrow	26	5	3		D	Atl. and Gulf pops. may represent full species	
	Whimbrel	25	5	5		A		
	Buff-breasted Sandpiper	25	3	4		A		
	Black-throated Blue Warbler	25	5	3		A		
	Cerulean Warbler	25	2	3		B	Roanoke River, NC; elsewhere?	
	Brown Pelican Southeast	24	5	1		R		
	Marbled Godwit	24	3	4		C		
	Bobolink	24	5	5		A		
	Buff-breasted Sandpiper	24	3	3		A		
	Brant	23	3	5		C	Mostly NC	
	King Rail	23	5	4		D		

Priority Entry Criteria ¹	Species	Total PIF Priority Species Score	Score		Percent of BBS Population	Local Migratory Status ²	Geographical or Historical Notes
			Area Importance	Population Trend			
	Sandhill Crane Greater	23	5	3		C	FL, GA
Ib (cont.).	White Ibis	23	5	4 ⁴		D	
	Stilt Sandpiper	23	4	5		A	
	Solitary Sandpiper	23	5	3		A	
	American Woodcock	23	5	4		D	Mostly winter, some breeding
	Wood Thrush	23	3	5	8.5*	B	
	Northern Parula	23	5	5	23.7*	B	
	Cape May Warbler	23	5	3		A	
	Worm-eating Warbler	23	3	2	14.7	B	
	Connecticut Warbler	23	5	3		A	
	Hooded Warbler	23	4	4	15.0*	B	
	Cory' s Shearwater	22	5	3		P	
	White Ibis	22	4	4	15.7?	D	
	American Black Duck	22	3	5		D	Breeds VA, NC; formerly wintered to GA
	Clapper Rail	22	5	3		D	
	Semipalmated Sandpiper	22	5	5		A	
	Purple Sandpiper	22	4	2		C	
	Short-billed Dowitcher	22	5	5		A	Many winter
	Short-eared Owl	22	3	5		C	
	Black Tern	22	5	5		A	
	Sedge Wren	22	4	2		C	
	Veery	22	5	5		A	
	Yellow-throated Warbler	22	4	3	25.5*	D	Mostly breeding, some winter coastal GA, ne FL
	Prairie Warbler	22	3	4	17.9*	B	
	Bay-breasted Warbler	22	3	3		A	
	Louisiana Waterthrush	22	4	2	8.1	B	
	Field Sparrow	22	5	5		D	Primarily winter
	Le Conte' s Sparrow	22	3	2		C	Mostly GA, SC

Priority Entry Criteria ¹	Species	Total PIF Priority Species Score	Score		Percent of BBS Population	Local Migratory Status ²	Geographical or Historical Notes
			Area Importance	Population Trend			
Ila.	American Bittern	21	4	5		D	Most wintering, local breeding
	Canvasback	21	4	4		C	
	Northern Bobwhite	21	4	5		R	
	Black-bellied Plover	21	4	5		A	Many winter
	Willet	21	5	3		D	
	Ruddy Turnstone	21	5	5		A	Many winter
	Sanderling	21	5	5		A	Many winter
	Western Sandpiper	21	5	3		A	Many winter
	Gull-billed Tern	21	5	4	11.5?	D	
	Least Tern	21	5	5		B	
	Black Skimmer	21	4	5		D	
	Yellow-billed Cuckoo	21	4	5		B	
	Black-throated Green Warbler (all, including Wayne's)	21	5	3		A	
	Grasshopper Sparrow	21	5	5		D	Primarily migration, some breeding and wintering
	Least Bittern	20	5	3		B	
	Lesser Scaup	20	5	5		C	
	Black Scoter	20	4	5		C	
	Northern Harrier	20	4	4		C	
	American Avocet	20	3	3		C	
	Least Sandpiper	20	5	5		A	
	Dunlin	20	4	5		C	
	Sandwich Tern	20	5	3		B	
	Common Ground-Dove	20	3	5	17.6?	R	FL to se SC
	Palm Warbler	20	3	5		C	
	Eastern Towhee	20	5	5	24.5*	D	

Priority Entry Criteria ¹	Species	Total PIF Priority Species Score	Score		Percent of BBS Population	Local Migratory Status ²	Geographical or Historical Notes
			Area Importance	Population Trend			
IIb (cont.).	Red-throated Loon	19	5	4		C	Major concentrations from Back Bay, VA, to Cape Fear, NC, uncommon to rare elsewhere
	Common Loon	19	5	3		C	
	Greater Scaup	19	3	5		C	
	Greater Yellowlegs	19	5	3		A	Some winter
	Pectoral Sandpiper	19	5	3		A	
	Royal Tern	19	5	3	30.6?	D	
	Barn Owl	19	5	3		D	
	Least Flycatcher	19	3	5		A	
	Carolina Chickadee	19	4	4	11.4	R	
Rusty Blackbird	19	3	5		C		
IIb.	Chuck-will ' s-widow	21	5	2	21.7*	B	Primarily breeding
	Prothonotary Warbler	21	4	1	34.4*	B	
	Acadian Flycatcher	20	4	1	13.7	B	
	White-eyed Vireo	20	5	2	17.8	D	
	Yellow-throated Vireo	19	4	1	10.8*	B	
	Pine Warbler	19	5	2	22.2*	D	
	Summer Tanager	19	5	2	18.6*	B	
	Orchard Oriole	19	5	2	12.9*	B	
IIIa.	Kentucky Warbler	19	2	1	2.5	B	
IIIb.	Bald Eagle ⁵	17	3	2		D	

Priority Entry Criteria ¹	Species	Total PIF Priority Species Score	Score		Percent of BBS Population	Local Migratory Status ²	Geographical or Historical Notes
			Area Importance	Population Trend			
Regional Interest	Great Blue Heron	13	4	1		D	
	Great Egret	14	4	2		D	
	Snowy Egret	14	4	2		D	
	Little Blue Heron	15	4	2		D	
	Tricolored Heron	18	4	3		D	
	Black-crowned Night-Heron	17	4	5		D	
	Yellow-crowned Night-Heron	18	5	2		D	
	Glossy Ibis	17	4	3		D	
	Canada Goose Atlantic pops.	No Score				C	Mostly NC, SC
	Tundra Swan	20	4	1		C	Mostly ne NC
	Wood Duck	17	3	2		D	
	Mallard	15	5	3		D	Mostly winter
	Blue-winged Teal	17	5	3		A	Some winter
	Northern Pintail	16	3	5		C	
	Redhead	21	3	4		C	
	Ring-necked Duck	19	4	2		C	
	Surf Scoter	20	3	4		C	Mostly NC
	White-winged Scoter	17	3	4		C	Mostly NC
	Mississippi Kite	19	3	1		B	Most common FL to SC; Rare and local NC
	Limpkin	16	2	2		R	Iso. pop. Apalachicola, FL
	Semipalmated Plover	17	5	3		A	Many winter
	Spotted Sandpiper	18	5	3		A	Many winter
	Lesser Yellowlegs	18	5	3		A	Many winter
	Common Tern	16	3	4		D	Of special concern VA, NC
	Forster ' s Tern	19	2	3		D	
	Whip-poor-will	18	3	1		B	
	Red-headed Woodpecker	19	4	2		4.8	D

Priority Entry Criteria ¹	Species	Total PIF Priority Species Score	Score		Percent of BBS Population	Local Migratory Status ²	Geographical or Historical Notes
			Area Importance	Population Trend			
Regional Interest (cont.).	Eastern Wood-Pewee	18	4	2		B	
	Eastern Kingbird	18	4	4		B	
	Loggerhead Shrike	19	3	4		D	Rare now in NC, VA Primarily breeding, rare winter coastal GA, FL
	Black-and-white Warbler	14	2	1		D	
	Yellow-breasted Chat	16	4	1		B	
	Eastern Meadowlark	16	2	5		D	

¹Entry 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.
- IIa. 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.
- IIb. Species with High Percent of BBS Population. Species with score total 19-21 with percent of BBS population above a threshold established (based on relative size of physiographic area), not already listed above, ordered by total score (*signifies highest percentage among physiographic area). These are overall moderate priority species.
- IIIa. 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.
- IIIb. Additional Federally Listed Species. Federal listed species if not already included above. Overall low priority, but appropriate legal obligations (Alegal priority species@) to protect through appropriate management and monitoring still apply. Only Bald Eagle meets this criterion in some Southeast physiographic areas.

Other 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.

³Highest percent of breeding population recorded in temperate North America indicated by A*@; ? indicates species widespread outside of temperate North America and/or waterbirds poorly sampled by Breeding Bird Survey within physio. area.

⁴AI or PT score revised from what was derived by BBS data, or lack thereof, based on better local information.

⁵Species listed as either Federal Endangered or Threatened.

APPENDIX B

SOUTH ATLANTIC COASTAL PLAIN BIRD ASSEMBLAGES AND HABITAT CONSERVATION PRIORITIES (from Hunter et al. 2001, Table 4. South Atlantic Coastal Plain Bird-Habitat Associations TB=threats breeding score, TN=threats non-breeding score)

	Total Score	TB	TN	Notes
PRAIRIES, SAVANNAS, AND GRASSLANDS, OPEN COUNTRY				
<u>Extremely High Priority</u>				
Bachman's Sparrow	30	4	4	Primarily breeding
Henslow's Sparrow	29		4	FL, GA, SC(?)
<u>High Priority</u>				
Sandhill Crane (Florida)	27	4	3	FL, GA
Henslow's Sparrow	26	4		NC, VA
Yellow Rail	26		4	
Bobolink	24		4	
Buff-breasted Sandpiper	24		3	Turf farms, airports, pastures
Sandhill Crane (Greater)	23		3	FL, GA
American Woodcock	23	3	3	Primarily winter
Northern Bobwhite	22	3	3	
Short-eared Owl	22		4	
Sedge Wren	22		3	
LeConte's Sparrow	22		4	Most in GA and SC
<u>Moderate Priority</u>				
Grasshopper Sparrow	21	3	3	Primarily migration
Loggerhead Shrike	20	4	3	Rare now in NC, VA
Palm Warbler	20		2	
Northern Harrier	20		3	
Barn Owl	19	3	3	
<u>Local or Regional Interest</u>				
Eastern Kingbird	18	3	2	
Eastern Meadowlark	17	3	3	
Bald Eagle	17	3	3	
EARLY SUCCESSIONAL SHRUB-SCRUB				
<u>Extremely High Priority</u>				
Bewick's Wren (Appalachian)	35		5	Nearing extinction
Painted Bunting (Eastern)	31	4		GA, SC, n. FL, se NC

Table 4 (cont.).

	Total Score	TB	TN	Notes
Bachman's Sparrow	30	4	4	Primarily breeding
Henslow's Sparrow	29		4	FL, GA, SC (?)
<u>High Priority</u>				
Henslow's Sparrow	26	4		NC, VA
American Woodcock	23	3	3	primarily winter
Prairie Warbler	23	3		
Northern Bobwhite	22	3	3	
Field Sparrow	22	3	3	primarily winter
<u>Moderate Priority</u>				
Common Ground-Dove	20	4	3	FL to se SC
Eastern Towhee	20	3	2	
Palm Warbler	20		2	
White-eyed Vireo	19	3	2	primarily breeding
Orchard Oriole	19	3		
<u>Local or Regional Interest</u>				
Whip-poor-will	18	3		Ground nesting
Yellow-breasted Chat	16	3	2	
CONIFER-HARDWOOD "GENERALISTS" (INCLUDING SPECIES USING BOTH PINE DOMINATED AND HARDWOOD DOMINATED STANDS)				
<u>Extremely High Priority</u>				
Black-throated Green Warbler	30	4		VA, NC, ne SC; canopy, often non-alluvial wetlands
<u>High Priority</u>				
Wood Thrush	24	3		Midstory nesting, ground foraging
Northern Parula	23	3		Canopy
Hooded Warbler	23	3		Understory
Worm-eating Warbler	23	3		Ground nesting
Yellow-throated Warbler	22	3		Mostly breeding, canopy
<u>Moderate Priority</u>				
Yellow-billed Cuckoo	21	3		Upper midstory
Carolina Chickadee	20	2	1	Cavity nesting
<u>"Watchlist" Species</u>				
Kentucky Warbler	20	3		Ground nesting
<u>Local or Regional Interest</u>				
Acadian Flycatcher	20	3		Midstory

Table 4 (cont.).

	Total Score	TB	TN	Notes
Summer Tanager	19	3		Canopy
Yellow-throated Vireo	19	3		Canopy
Eastern Wood-Pewee	18	3		Midstory
Black-and-white Warbler	14	2	2	primarily breeding, ground nesting
MARITIME WOODLANDS (many of the same species under pine-hardwood, but also transient landbirds and 2 breeding species)				
<u>Extremely High Priority</u>				
Kirtland's Warbler	35		5	
Painted Bunting (Eastern)	31	4		GA, SC, ne FL, se NC; edges
<u>High Priority</u>				
Bicknell's Thrush	26		4	
Black-throated Blue Warbler	25		4	
Cape May Warbler	23		3	
Connecticut Warbler	23		2	
Veery	22		3	
Bay-breasted Warbler	22		3	
<u>Moderate Priority</u>				
Black-throated Green Warbler (All, including Wayne's)	21		3	
Common Ground-Dove	20	4	3	Ground nesting
Least Flycatcher	19		2	
COLONIAL TREE AND/OR BRUSH NESTING WATERBIRDS (most species feed in emergent wetlands, open water, or mudflats)				
<u>Extremely High Priority</u>				
Wood Stork (Southeast)	29	4	3	FL, GA, se SC
<u>High Priority</u>				
Brown Pelican (Southeast)	24	4	3	Coastal
White Ibis	22	4	2	
<u>Local or Regional Interest</u>				
Tricolored Heron	18	2	2	
Yellow-crowned Night-Heron	18	3	2	
Black-crowned Night-Heron	17	2	2	
Little Blue Heron	15	3	2	
Great Egret	14	2	2	

Table 4 (cont.).

	Total Score	TB	TN	Notes
Snowy Egret	14	2	2	
Great Blue Heron	13	2	2	
EMERGENT WETLANDS				
<u>Extremely High Priority</u>				
Saltmarsh Sharp-tailed Sparrow	30		4	Coastal
<u>High Priority</u>				
Black Rail	27	4	4	
Nelson's Sharp-tailed Sparrow	27		4	Coastal
Yellow Rail	26		4	
Seaside Sparrow	26	3	3	Coastal
King Rail	23	3	3	
American Black Duck	22	4	3	Mostly NC, formerly to GA
Clapper Rail	22	3	3	Coastal
<u>Moderate Priority</u>				
American Bittern	21	3	3	Most wintering, local breeding
Least Bittern	20	3		
Northern Harrier	20		3	
<u>Local or Regional Interest</u>				
Peregrine Falcon	19		3	
Bald Eagle	17	3	3	
ESTUARIES, MUDFLATS, AND IMPOUNDMENTS				
<u>High Priority</u>				
Whimbrel	25		4	Some overwinter
Marbled Godwit	24		4	
Stilt Sandpiper	23		3	Mostly inland
Solitary Sandpiper	23		2	Mostly inland
Semipalmated Sandpiper	22		3	
Short-billed Dowitcher	22		3	Many winter
Buff-breasted Sandpiper	25		4	Mostly inland
Black Tern	22		3	
<u>Moderate Priority</u>				
Western Sandpiper	21		4	Many winter
American Avocet	20		4	
Dunlin	20		3	
Least Sandpiper	20		2	Many winter
Greater Yellowlegs	19		2	Some winter
Pectoral Sandpiper	19		2	Mostly inland

Table 4 (cont.).

	Total Score	TB	TN	Notes
<u>High Percent of Continental Population</u>				
Semipalmated Plover	17		2	Many winter
Spotted Sandpiper	18		2	Many winter
Lesser Yellowlegs	18		2	Many winter

APPENDIX C

Protected Bird Species in Georgia

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

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 D

US Fish and Wildlife Service Species of Conservation Concern (2002) in the Southeastern Coastal Plain (BCR 27)

Black-capped Petrel	Le Conte's Sparrow
Audubon's Shearwater	Nelson's Sharp-tailed Sparrow
Little Blue Heron	Saltmarsh Sharp-tailed Sparrow
Reddish Egret	Seaside Sparrow
Swallow-tailed Kite	Painted Bunting
Short-tailed Hawk	Orchard Oriole
American Kestrel (resident <i>paulus</i> ssp. only)	
<i>Peregrine Falcon</i>	
Yellow Rail	
Black Rail	
Limpkin	
Snowy Plover	
Wilson's Plover	
American Oystercatcher	
Whimbrel	
Marbled Godwit	
Red Knot	
Semipalmated Sandpiper	
Stilt Sandpiper	
Buff-breasted Sandpiper	
Short-billed Dowitcher	
Gull-billed Tern	
Common Tern	
Least Tern (except where Endangered)	
Black Tern	
Black Skimmer	
Common Ground-Dove	
Burrowing Owl	
Chuck-will's-widow	
Brown-headed Nuthatch	
Bewick's Wren	
Wood Thrush	
Northern Parula	
Black-throated Green Warbler	
Prairie Warbler	
Cerulean Warbler	
Swainson's Warbler	
Bachman's Sparrow	
Henslow's Sparrow	