DRAFT

Avian Conservation Implementation Plan
Timucuan Ecological and Historic Preserve and
Fort Caroline National Memorial

National Park Service
Southeast Region

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In cooperation with

TIMU Resource Management Staff, National Park Service
And Bird Conservation Partners
December 2003

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Introduction

This Avian Conservation Implementation Plan (ACIP) is provided to the staff at Timucuan Ecological and Historic Preserve (TIMU) and Fort Caroline National Memorial (FOCA) to serve as guidance to identify, document, and undertake bird conservation activities in the park and with neighboring communities, organizations, and adjacent landowners. 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 TIMU (hereafter also includes FOCA) is primarily a coastal estuary/marsh system, most recommendations for bird conservation will be based on existing colonial waterbird, shorebird, and waterfowl plans. However, because TIMU has upland habitats as well, the PIF plan will be used to make recommendations as well.

Information and data presented in the ACIP have been obtained from several sources: 1) interviews with TIMU staff 2) TIMU bird conservation partners 3) the PIF South Atlantic Coastal Plain Bird Conservation Plan, Version 1.0 (Hunter et al. 2001), 4) NPS databases, and 5) personal communications with bird conservation specialists throughout North America, especially in the southeastern United States. This plan has been reviewed by TIMU resource management staff and managers, Southeast Coast Inventory and Monitoring Network (SEC I&M) staff, and bird conservation partners and approved by TIMU 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.

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

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 (ACIP),
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 TIMU and with adjacent partners or landowners. Concurrently, the development of a Memorandum of Understanding (MOU) between the FWS and the NPS to implement Presidential Executive Order (EO) 13186, **Responsibilities of Federal Agencies to Protect Migratory Birds**, 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** (March 2000), a visionary document developed and signed by the Southeast Natural Resource Leaders Advisory Group (SENRLAG), 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 (Chapter 1.5), Environmental Leadership (Chapter 1.6), Cooperative Planning (Chapter 2.3.1.9), Land Protection (Chapter 3), and especially Natural Resource Management (Chapter 4) that details policy and management guidelines which apply to bird conservation. Important policies in this chapter include:

- Planning for Natural Resource Management (4.1.1)
- Partnerships (4.1.4)
- Restoration of Natural Systems (4.1.5)
- Studies and Collection (4.2)
- General Principles for Managing Biological Resources (4.4.1)
- Plant and Animal Population Management Principles (4.4.1.1)
- Management of Native Plants and Animals (4.4.2)
- Management of Endangered Plants and Animals (4.4.2.3)
- Management of Natural Landscapes (4.4.2.4)
- Management of Exotic Species (4.4.4)
- Pest Management (4.4.5)
- Fire Management (4.5) and
- Water Resource Management (4.6)

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, Cumberland Island 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 (Ocmulgee National Monument), and others such as the Blue Ridge Parkway, Obed Wild and Scenic River, and Timucuan 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.

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

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

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

Park Description

Situated entirely within Duval County and the city limits of Jacksonville, FL, Timucuan Ecological and Historical Preserve covers approximately 18,600 ha (46,000 acres) between the St. Johns and Nassau rivers. The southern third of the Preserve lies at the mouth of the extensive St. Johns River watershed, which encompasses parts of Duval and several other counties for approximately 300 miles to the south. The St. Johns River is heavily impacted by agricultural, industrial and urban pollution; however, marine tidal waters near its mouth serve to ameliorate pollution through dilution and flushing. Water quality is considered relatively good in the Preserve due to this flushing action. The northern two thirds of the Preserve lies within the Nassau River drainage basin, a small watershed that covers parts of Duval and Nassau counties. The Nassau River

watershed has not yet experienced the concentrated urban and industrial growth found along the St. Johns River; still, portions of the watershed exhibit poor water quality. The area surrounding the Preserve to the west and north is predominantly marsh and low uplands utilized for timbering, residential and agricultural uses (USDI NPS 2000).

TIMU and FOCA are administered as one park. Fort Caroline NM includes approximately 138 acres located along the St. Johns River within the city of Jacksonville and Duval County, Florida. Located primarily on a bluff overlooking the river that rises to a height of nearly 90 feet, the park consists of mixed species forest with fresh water wetlands, preserving an enclave of representative species native to the North Florida-South Georgia community (USDI NPS 2000).

Duval is one of the fastest growing counties in Florida. The Preserve is located in an area that has historically experienced limited development and growth due to lack of easy and quick access. Development and recreational use pressures have increased, however, with the opening of a six-lane bridge in 1989 and ongoing construction of a major highway linking the bridge to the interstate highway system (USDI NPS 2000).

Throughout both watersheds, many residential homes operate private well and septic systems, the failure of which is a presently unquantified source of water pollution. An unknown amount of pesticide, herbicide, and fertilizers is transported by stormwater runoff to the marshes of the Preserve. Contaminated sediments are known to occur in some areas of the Preserve, but the extent of contamination and the effects of sediments resuspension are not known. This is of particular concern as several major dredging projects are proposed in the near future (USDI NPS 2000).

Exotic plants and animals are known to occur within the Preserve, but information on species, locations and potential threats is lacking. The Preserve presently has little information on vegetative and aquatic habitats, ecological processes, and current ecological conditions. Related to the issue of exotic species is the recent development of a prescriptive fire program, which is expected to be instrumental in returning native species to the numerous pine plantations within the Preserve (USDI NPS 2000).

Public lands within TIMU are co-managed by the NPS, State of Florida, City of Jacksonville, US Army Corps of Engineers, US Navy, etc. Many privately owned lands remain within the boundary of TIMU. This mix of land ownership presents some challenging management issues, but also establishes a partnership among many private and government interests that allow opportunities for creative implementation of TIMU's goals (USDI NPS 2000).

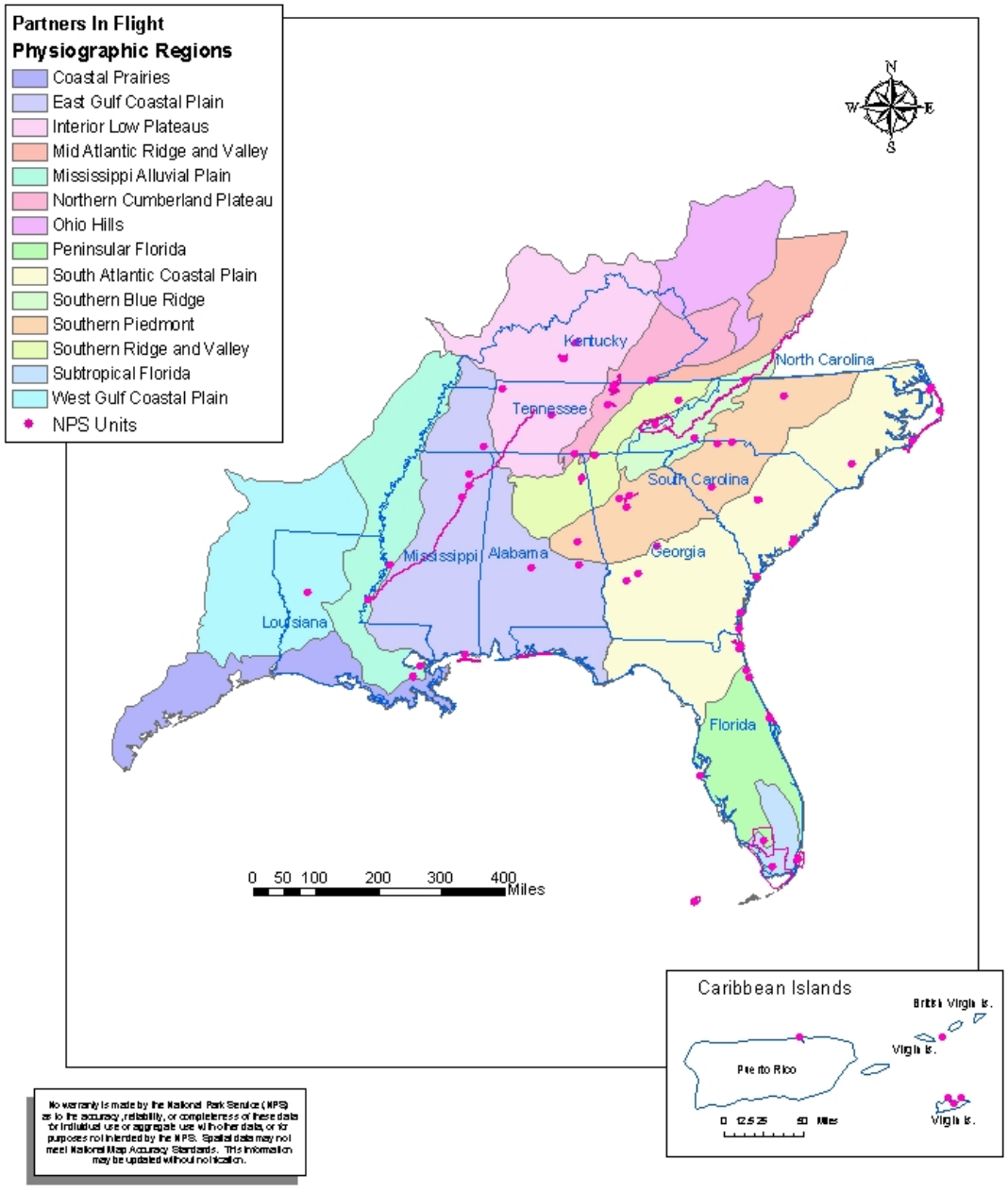
Avian Resources of South Atlantic Coastal Plain

The South Atlantic Coastal Plain, consisting of about 10,121,457 million ha, 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

Partners in Flight (PIF) Regions

Southeast Region (SER)

National Park Service
U.S. Department of the Interior



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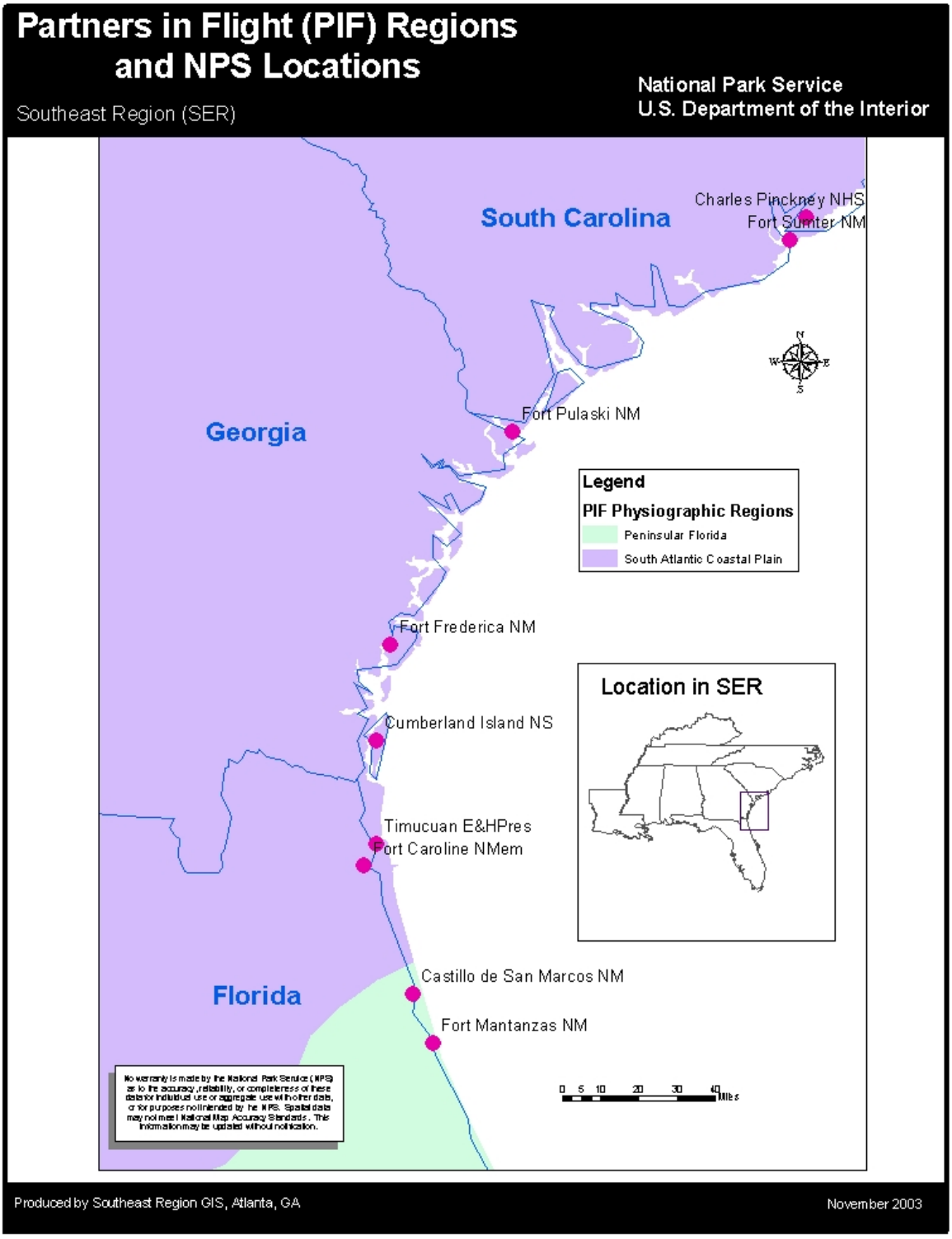
March 2004


Partners in Flight (PIF) Regions
and NPS Locations
Southeast Region (SER)
National Park Service
U.S. Department of the Interior
South Carolina
Georgia
Florida
Charles Pinckney NHS
Fort Sumter NM
Fort Pulaski NM
Fort Frederica NM
Cumberland Island NS
Timucuan E&HPres
Fort Caroline NMem
Castillo de San Marcos NM
Fort Mantanzas NM
Legend
PIF Physiographic Regions
Peninsular Florida
South Atlantic Coastal Plain
Location in SER
0 5 10 20 30 40
Miles
Produced by Southeast Region GIS, Atlanta, GA
November 2003

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 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.

Conservation issues within the South Atlantic Coastal Plain include:

(1) management and conservation of forested floodplains and related wintering waterfowl and migratory landbird needs;

(2) monitoring and protection of colonially nesting terns and skimmers, as well as vulnerable shorebirds, especially in areas with increased human disturbance and habitat loss;

(3) research and protection of Wood Storks and White Ibises;

(4) conservation of nongame waterbird habitats (under the purview of other bird conservation groups such as the Western Hemispheric Shorebird Reserve Network, Waterbird Society, North American Waterfowl Management Plan, and the International Association of Fish and Wildlife Agencies' Migratory Shore and Upland Gamebird Subcommittees);

(5) best management practices for forested wetlands, maritime communities, southern pine forests, and upland hardwood (including riparian) forests; and

(6) conservation and protection of vulnerable Nearctic Neotropical migratory landbirds.

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.

Conservation objectives for the South Atlantic Coastal Plain revolve mostly around (1) stabilizing or increasing populations of high priority breeding bird species, (2) wintering species, (3) and increasing the quality and availability of stopover habitat for transient species. Although waterbirds are treated here, these species groups are

mostly the subjects of other planning efforts. For landbird species, the primary habitat objectives proposed in this plan include the following:

1. Retain and restore 526,000 ha (1.3 million acres) of native warm season grass habitats, with as much associated with longleaf pine as feasible.

2. Provide at least 121,457 ha (300,000 acres) of 5 -year idle lands, 121,457 (300,000 acres) acres of annuals, and 243,000 ha (600,000) acres of 10-20 year idle lands.

3. Maintain and improve the habitat quality of 8 forested wetland sites for Swallow-tailed Kite, maintain and stabilize at least 1 forested wetland site for Cerulean Warbler, at least 10 sites for Wayne's Black-throated Green Warbler, and 30 sites for Swainson's Warblers, which requires 10 patches over 40,485 ha (100,000 acres), 15 patches over 8,100 ha (20,000 acres), 7 patches over 4,050 ha (10,000 acres), and 30 patches over 2,400 ha (6,000 acres).

4. Protect 100% of remaining maritime communities and increase acreage wherever restoration is possible.

5. Increase longleaf pine forest acreage from 607,300 ha (1.5 million acres) to over 890,700 ha (2.2 million acres) and improve conditions favoring warm-season grassy ground cover, on at least 263,157 ha (650,000 acres) by year 2025.

Avian Conservation in TIMU

Avian Biodiversity: TIMU is well known for its rich avifauna. At least 339 species have been documented from TIMU or in nearby Duval County (USDI NPS 2003). TIMU has a complete avian inventory and a recently updated checklist of birds that is available for the public. The variety of habitats and the rich bird fauna of TIMU establish this area as an important avian conservation area. Indeed, portions of TIMU have been recently recognized and designated an Important Bird Area of Florida.

Verified records of birds in TIMU 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.

Inventory: The park has recently completed an avian inventory boasting 339 species observed in the park and vicinity. Park managers realized this is the first step necessary to understanding the avifauna of the park and developing appropriate management strategies for birds and other wildlife in the park. TIMU has identified additional inventory needs that will further provide baseline information on which park conservation programs can be implemented.

Threatened and Endangered Species: Several Federally listed species occurs in TIMU: Wood Stork and Bald Eagle occur as breeders, Piping Plover occurs during migration and winter, and Brown Pelican occurs during all seasons (but not breeding in the park). Furthermore, TIMU is an area where Critical Habitat has been established for the wintering population of the Piping Plover. Extirpated from the eastern US in the mid-1950's, the American Peregrine Falcon (now de-listed) occurs within TIMU during migration and in winter.

Several **Florida** listed species (Appendix C) occur in TIMU and include Swallow-tailed Kite, Southeastern American Kestrel, and Least Tern.

In addition PIF lists other high priority species in need of conservation action such as Red Knot, Reddish Egret, American Black Duck, White Ibis, Roseate Spoonbill, Mottled Duck, Wilson's Plover, Gull-billed Tern, Black Skimmer, American Oystercatcher, American Woodcock, Gray Kingbird, Brown-headed Nuthatch, Painted Bunting, Northern Parula, Hooded Warbler, Saltmarsh Sharp-tailed Sparrow, Seaside Sparrow and many other migrating and wintering shorebirds, warblers and sparrows, all of which occur in TIMU.

Monitoring: Currently, several avian monitoring projects are being conducted at TIMU:

- A Christmas Bird Count circle is located in the area and covers a portion of the park
- Shorebird surveys in cooperation with the US NAVY using International Shorebird Survey protocols
- Spring and fall migrations counts are conducted in association with the International Migratory Bird Day (IMBD)
- Randomized recreational birding

Research: Scientific research is permitted within the park. Only one project is currently undertaken. This is

- Annual survival of the Breeding Population of Painted Bunting in the Southeastern United States

Outreach: TIMU does have educational/outreach/interpretive activities related to birds.

- Several bird walks are led each year, highlights of which are the Annual Woodcock Field Trip, Painted Bunting walk, and spring and fall walks
- Specially organized trips for birding groups

Park Identified Needs for Avian Conservation

TIMU has identified several projects that will enhance protection of avian communities at the seashore.

Inventory:

- The park desires to have additional inventory, and status and trend data for resident birds in all habitats, migratory passerines and shorebirds, and wintering birds in all habitats

Monitoring:

- The park desires to increase its capability to monitor several key bird communities.

Outreach:

- The park desires to strengthen it's outreach and visitor education programs since many threats to birds are associated with visitors and their uses of the preserve

Coordination with Regional Conservation Initiatives

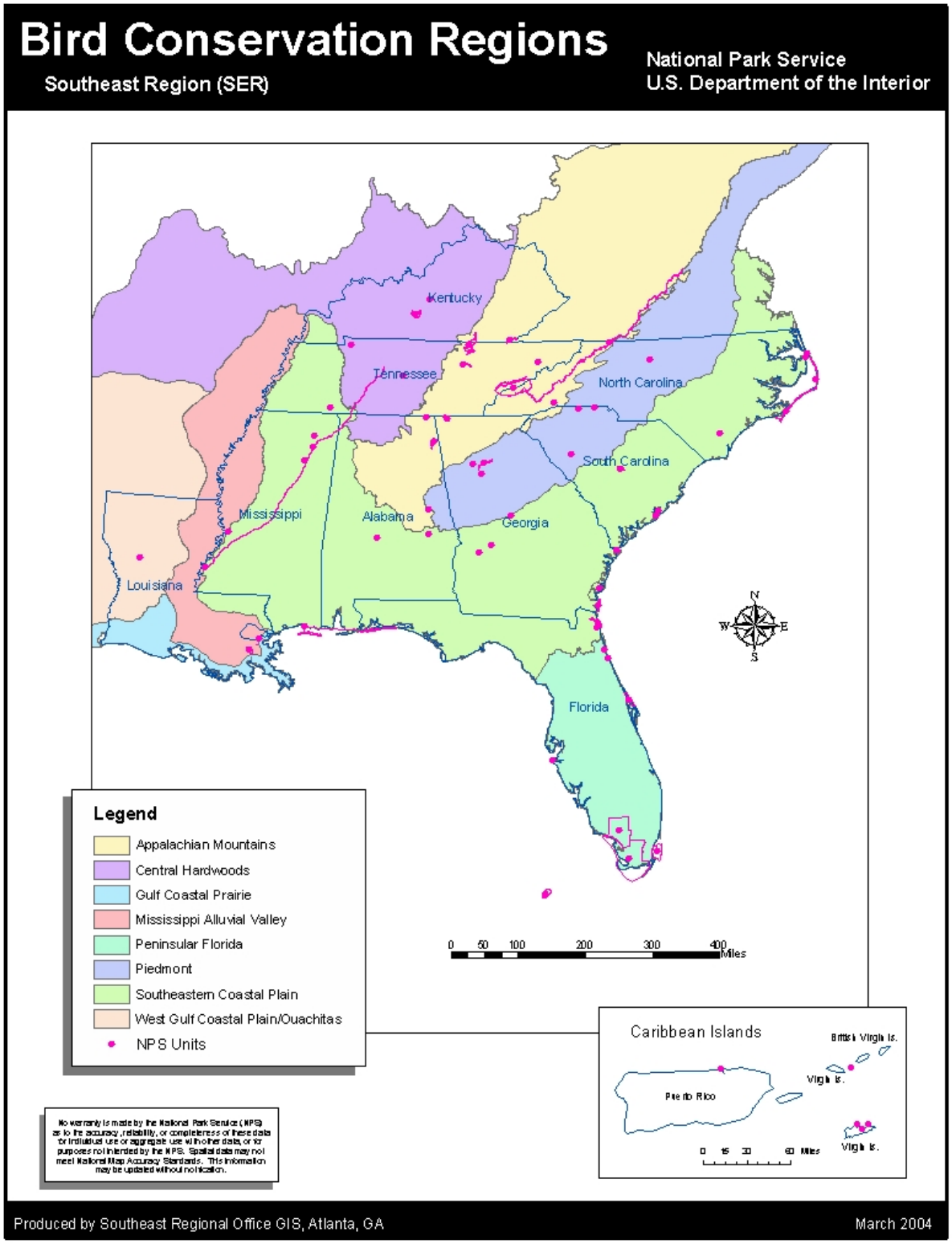
North American Bird Conservation Initiative

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, TIMU 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 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 base throughout the region to assist partners in bird conservation efforts (see contacts below). This staff can provide valuable assistance to TIMU 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


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
0 50 100 200 300 400 Miles
Legend
Appalachian Mountains
Central Hardwoods
Gulf Coastal Prairie
Mississippi Alluvial Valley
Peninsular Florida
Piedmont
Southeastern Coastal Plain
West Gulf Coastal Plain/Ouachitas
NPS Units
Caribbean Islands
British Virgin Is.
Virgin Is.
Puerto Rico
Virgin Is.
0 15 30 60 Miles
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March 2004

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. TIMU has several potential projects that could be funded by NAWCA (see Habitat Restoration and Threat Management recommendations and consult ACJV coordinator for qualifying projects).

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. TIMU being a coastal park with all major bird groups represented will utilize all the bird conservation initiative plans. Since shorebird and colonial waterbird plans have not been developed on a regional basis, and the SACP plan covers these species, many of the recommendations in this plan will be derived from the SACP priorities.

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 Florida does have a landbird conservation coordinator and will be instrumental in assisting TIMU to implement recommendations identified in this ACIP and projects important to bird conservation relative to Florida'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 2003. The developing regional shorebird plan will be important for TIMU since many of TIMU's avian resources are related to its shoreline and shorebird use, primarily during migration and winter.

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 2003.

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/Management
- 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**, 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 has inventoried its bird fauna exceptionally well. Although the park has documented its avifauna well, additional inventory is needed to fully understand the status of birds in the park so that conservation actions for birds can be implemented. Status of high priority species as identified in the Florida's Endangered Species, Threatened Species, and Species of Special Concern and the South Atlantic Coastal Plain bird conservation plan is needed to effectively structure park management for the continued preservation and enhancement of the park's avifauna and habitats.
Additional surveys are needed

- **in salt marshes where several high priority species occur in both in summer and winter but data is lacking, especially for secretive marshbirds ("Worthington's" Marsh Wren, Nelson's and Saltmarsh Sharp-tailed Sparrows, Seaside Sparrow, Clapper Rail)***

Additionally, TIMU is encouraged to:

- **partner with Florida Wildlife and Conservation Commission (FWCC), Cumberland Island National Seashore (CUIS), St. Johns River Water Management District (SJRWMD), The Nature Conservancy (TNC) and Duval Audubon Society (http://www.duvalaudubon.org/) to coordinate area inventory effort**

- **continue to partner with the US Navy at Mayport to conduct International Shorebird Surveys**

- **partner with Department of Environmental Protection to survey Pumpkin Hill Preserve State Park**

- **standardize inventory and monitoring methodology to conform to NPS and/or FWS recommended standards (Fancy and Sauer 2000; Hunter 2000)**

Monitoring

Efforts should be made to continue existing monitoring programs, striving to conform to established NPS or FWS survey protocols. Coordination with the Atlantic Coast Joint Venture Coordinator and FWCC 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:

- **establish a monitoring program to document nesting and productivity of federally listed Wood Stork and Bald Eagle, and state listed Swallow-tailed Kite, and Least Tern***

- **establish a migration and wintering monitoring program for Piping Plover (http://midwest.fws.gov/endangered/pipingplover/recplan-fnl.html)***

- **establish a Painted Bunting monitoring program***

- **strengthen migration monitoring efforts by using standardized protocols for bird groups being monitored***

- **establish forest point count monitoring to monitor resident landbirds and breeding Neotropical migrants***

- **establish a marshbird monitoring program following protocols established by the US Geological Survey, Biological Resources Division (USGS-BRD)**

- **establish International Shorebird Survey (ISS) to document migration and winter usage of shorebird habitats**

- **partner with Florida Wildlife and Conservation Commission (FWCC), Cumberland Island National Seashore (CUIS), St. Johns River Water Management District (SJRWMD), TNC, and Duval Audubon Society to coordinate area monitoring efforts**

- **submit monitoring information to appropriate databases (NPSpecies, eBird, South Atlantic Migratory Bird Initiative (SAMBI; http://samigbird.fws.gov/) for waterfowl and shorebirds [see Partnerships below])**

- **hire additional staff to support needed monitoring programs***

- **standardize inventory and monitoring methodology to conform to NPS and/or FWS recommended standards (Fancy and Sauer 2000, Hunter 2000)**

Habitat Restoration/Management

Historical landscape conditions in the Southeastern US have changed dramatically since early European explorers began documenting the area, its habitats, and its inhabitants. Historic landscape alteration by Native Americans for a variety of uses (Williams 2002), wildfire, bison, beaver and elk effects, weather, etc., (Hunter et al.) resulted in a landscape mosaic that supported a rich and diverse bird fauna in the Southeast (Barden 1997; Brawn 2001). The arrival of Europeans and the subsequent change in landscape has dramatically effected bird habitat and bird populations. Bird conservationists have recognized for a long time 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 TIMU.

Recently, habitat restoration efforts have increased nationwide and on NPS lands, NPS receiving restoration emphasis and guidance in the 2001 Management Policies (NPS 2001). Habitat restoration efforts that parks may undertake are wetland restoration, grassland restoration, woodland restoration, etc. utilizing a wide range of tools to accomplish the restoration. Some of these tools may be but are not limited to forest management practices, exotic species management, public use and recreation management, infrastructure development management, and prescribed fire.

Due to the protected nature of TIMU 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. Protection, restoration, and enhancement of habitats in TIMU can greatly contribute to established habitat goals identified in the South Atlantic Coastal Plain bird conservation plan and regional shorebird and colonial waterbird conservation plans. TIMU provides excellent area and vegetative cover for a wide variety of birds for nesting, foraging, migrating, and wintering, but some habitats could be improved through management of recreational uses and habitat restoration, and use of prescribed fire in salt marshes and pine communities to mimic historic disturbances. Specific recommendations are to:

- **work with partners to eliminate Off Road Vehicles (ORV's) and associated disturbances to beach nesting birds or wherever ORV's are used**

- **manage recreational uses, including boat use, personal watercraft (PWC) to eliminate disturbance to birds nesting, foraging, and resting on the beach or tidal creeks (potentially prohibit use of PWC and boats if disturbance to birds can be documented)**

- **reintroduce historic disturbances such as fire to the landscape to improve habitat structure and productivity, especially in salt marshes, maritime forests (oak scrub), pine flatwoods, and longleaf pine forests**

- **restore longleaf pine/wiregrass communities**

- **acquire as much land management capability either through land purchase or conservation easement (see US Fish and Wildlife Service private lands contact)**

- **preserve all remaining maritime forest and shrub-scrub areas for resident landbirds, Neotropical migratory birds for breeding and migration stopover**

- **eliminate or minimize conversion of shrub scrub and pine flatwoods to pine plantations either through purchase options or conservation easements**

- **work with partners maintain or restore natural character and function of the beach front and dune systems by allowing natural processes to shape landscape features**

- **work with partners to establish vehicle and pedestrian free areas for shorebird migration and winter resting and foraging areas**

- **restore hydrological processes where appropriate**

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

- **enhance or maintain water quality, especially in extensive marshes to support aquatic biota necessary to support existing aquatic invertebrates and fish as food sources for birds that forage in the marshes**

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

Threat Management

Because of the wide variety of land ownerships within TIMU and the multi-agency co-managed nature of TIMU, unified natural resource management will be a challenge. However, within the scope of NPS's authority, TIMU is encouraged to:

- **work with partners, especially the Florida State Park system, to phase out ORV use plan that addresses impacts to birds that nest, rest, and forage on the beach or in other areas where ORV's travel***

- **manage recreational uses of the seashore, including personal watercraft, kayaking, canoeing, kite boarding, etc. to avoid or minimize disturbance to nesting, foraging, migrating, and wintering birds***

- **work with partners to identify vehicle and pedestrian free areas on the beach to protect nesting, foraging, and resting birds***

- **protect Critical Habitat for wintering Piping Plover***

Feral cats do occur in TIMU, but their impact on birds in unknown; however, feral cats in natural areas always result in some degree of impact to bird life. Additionally, unleashed dogs have been observed to disturb nesting, feeding and resting shorebirds. Staff has identified the need to manage feral cats and unleashed dogs. The park is

encouraged to:

- **develop Feral Cat Management Plan similar to that developed at Cape Hatteras National Seashore (Altman2002, Harrison 2002)***

- **develop and enforce a policy of no unleashed and unattended dogs in the preserve (Huguenot City Park has a potential problem with unleashed dogs and negative impacts to birds in the park)***

Exotic plants species are not known to be negatively impacting habitat at TIMU. However, it is important to establish and continue inventory and monitoring for exotic plant species, especially the occurrence of exotic species and take appropriate management action before species do alter habitats. TIMU is encouraged to:

- **develop an exotic plant detection and monitoring program**

Additionally, the park is encouraged to:

- **prevent future installation of towers of any kind**

- **determine avian mortality from existing towers**

- **acquire as much land management capability either through land purchase or conservation easement (see US Fish and Wildlife Service private lands contact)**

- **place monofilament line disposal containers in fishing or beach access areas (contact Canaveral Seashore)**

- **hire additional park law enforcement and outreach/education staff to manage visitors and their activities near bird nesting areas**

Research

TIMU has many research needs. Basic research on ecological processes and habitats are largely unknown and effects of increasing development and recreational pressures, exotic species, etc. all need investigation. Primary research projects and topics are to:

- **continue support of Painted Bunting research**

- **determine use of maritime and woodland habitats for Neotropical migratory bird breeding and migration***

- **determine potential to manage habitat to encourage colonization by Southeastern American Kestrel**

- **encourage partners to assess impact of ORV and recreational use on beach nesting birds and foraging and resting shorebirds***

- **quantify non-point pollution sources and effects from stormwater runoff that carries pesticides, herbicides, and fertilizers, etc. into marsh/estuary system**

- **determine the extent and nature of beached and dead birds along the beach**

- **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**

Compliance

Park compliance with the Migratory Bird Treaty Act and the Executive Order 13186, **Responsibilities of Federal Agencies to Protect Migratory Birds,** 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, especially those listed in the USFWS Species of Conservation Concern for the South Atlantic Coastal Plain (Appendix D). Compliance considerations for the park are for:

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

- **participate in International Migratory Bird Day (IMBD) events with a local partner (http://birds.fws.gov/imbd.html) such as Duval Audubon Society* or with Little Talbot or Big Talbot Island State Park***
- **develop outreach and educational programs to enhance visibility of bird conservation issues, which may include organized bird walks, owl prowls, and raptor surveys with the public ***

- **continue with construction of a bird observation tower for visitors**

- **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)**

- **develop guided bird walks and programs to be conducted a few times a month**

- subscribe to Florida Birds, an internet based forum for the exchange of information related to Florida birds

- publish articles in local newspapers related to bird protection and conservation activities

- link bird conservation and management literature from park to park's web site home page

- encourage accurate documentation and reporting from random outings by visitors (see Cornell University's eBird monitoring program 2002 (http://www.ebird.org/about/index.jsp)

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

- explore cultural affiliation of landscape to inhabitants, both historical and contemporary. Cultures are strongly tied to the landscape they inhabit and birds often play a role in a cultural tie to the landscape. When these connections are discovered and preserved, a greater appreciation for the landscape and its value to the culture can be achieved.

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 Duval Audubon Society for potential cooperation and implementation of segments of this plan***

- **keep abreast of Duval County initiatives or programs that could impact park resources***

- **meet with TIMU management partners to discuss implementation of various aspects of this plan***

- **participate in the active conservation of birds and habitats with the South Atlantic Migratory Bird Initiative (SAMBI), an Atlantic Coast Joint Venture initiative***

- **develop partnerships with FWCC to develop cooperative projects for bird conservation***

- **establish partnership with the Longleaf Alliance to assist in plans to restore longleaf pine/wiregrass communities (http://www.longleafalliance.org/)**

- **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**

- evaluate local or regional land use data and plan potential for habitat protection across organizational boundaries and work with local communities to develop appropriate protection measures

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. Within this ACIP, identified priority projects that are considered to be high park priorities as well as NABCI priorities are marked with and asterisk (*). TIMU 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.

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.

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

Specific congressional appropriations to protect migratory birds has recently been authorized under the Neotropical Migratory Bird Conservation Act (2000) (http://www.nfwf.org/programs/nmbcapp.htm). Appropriations through this Act are authorized up to $5 million per year. However, in 2000, appropriation was approximately $3.75 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. Park staff is encouraged to view the web site and obtain contact information. Primary contacts for TIMU are:

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LITERATURE CITED

Altman, J. 2002. Feral Cat Management Final Report for Cape Hatteras National Seashore, Wright Brothers National Memorial, and Fort Raleigh National Historic Site. April 15, 2002. 20p.

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.

Conway, C.J. 2002. Standardized North American Marsh Bird Monitoring Protocols. U.S. Geological Survey, Biological Resources Division. Arizona Cooperative Fish and Wildlife Unit. December 2002. 23p.

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.

Harrison, M. 2002. Outer Banks Feral Cat/Cats Indoors Outreach and Education Program. Draft Final Report to Cape Hatteras National Seashore in cooperation with The Nature Conservancy. June 17, 2002. 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., Buehler D.A., Canterbury R.A., Confer J.L., and P.B. Hamel. 2001. Conservation of disturbance-dependent birds in eastern North America. Wildlife Society Bulletin. 34p.

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 Advisory Group. 2000. A Strategy for Collaboration. unpublished. 4p.

U.S. Department of Interior, Geological Survey. 2001. National Point Count Database. Biological Research Division, Patuxent Wildlife Research Station, Patuxent, MD.

U.S. Department of Interior, National Park Service. 2000. Southeast Coastal Inventory and Monitoring Network Draft Study Plan. December 2000. 148p.

U.S. Department of Interior, National Park Service. 2001. National Park Service Management Policies. 2001. December 2000. 137p.

USDI National Park Service. 1997. Resource Management Plan for Timucuan Ecological and Historic Preserve and Fort Caroline National Memorial. 135pp.

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

USDI National Park Service. 2003. Birds of Timucuan Preserve: Field Checklist. Timucuan National Preserve, National Park Service. 16p.

USDI National Park Service Organic Act. 1916. 39 Stat. 535 16 U.S.C. 1-4, enacted August 25, 1916.

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

U.S. 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: Entry criteria and selection rationale.)

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

Table 1 (cont.).

Priority Entry Criteria[1]	Species	Total PIF Priority Species Score	Score: Priority Importance	Area Trend	Percent Population	Local Population of BBS Status[2]	Migratory Historical	Geographical or Notes	
	Swallow-tailed Kite	28	4		3	10.8 B	SC, GA, FL		
	North American American Kestrel	28	5		4		D		
	Southeastern Piping Plover[5]	28	4		4		D	Mostly winter, breeding possibly SC	NC,
	American Oystercatcher	28	5		3		D		
	North American								
Ib.	Short-tailed Hawk	27	2		3		B	St. Marks to Lower Suwannee, FL	
	Florida Black Rail	27	4		4		D		
	Sandhill Crane	27	3		3		R	FL, GA	
	Florida Brown-headed Nuthatch	27	5		5	38.7*	R		
	Nelson's Sharp-tailed Sparrow	27	3		3		C		
	Audubon's Shearwater	26	5		3		P		
	Caribbean 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?

Table 1 (cont.).

Priority Entry Criteria[1]	Species	Total PIF Priority Species Score	Score: Priority Importance	Area Trend	Population	Percent of BBS Population	Local Status[2]	Migratory Historical	Geographical or Notes
	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
	Sandhill Crane Greater	23		5		3			C FL, GA
	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

Table 1 (cont.).

Priority Entry Criteria[1]	Species	Total PIF Priority Species Score	Score: Priority Importance	Area Trend	Percent Population	Local Population of BBS Status[2]	Migratory or Historical	Geographical Notes
	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
IIa.	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 Harrier20	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

Table 1 (cont.).

Priority Entry Criteria[1]	Species	Total PIF Species Score	Score: Priority Importance	Area Trend	Percent Population Population	Local of BBS Status[2]	Migratory	Geographical or Historical Notes
	Palm Warbler	20	3	5		C		
	Eastern Towhee	20	5	5	24.5*	D		
	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		
	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			Primarily breeding
	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	

Table 1 (cont.).

Priority Entry Criteria[1]	Species	Total PIF Priority Species Score	Score: Priority Importance	Area Trend	Percent Population Population	Local of BBS Status[2]	Migratory	Geographical or Historical Notes
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	No Score					C	Mostly NC, SC Atlantic pops.
	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	Primarily breeding	

Table 1 (cont.).

Priority Entry Criteria[1]	Species	Total PIF Species Score	Score: Priority Importance	Area Trend	Percent Population Population	Local of BBS Status[2]	Migratory	Geographical or Historical Notes	
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	
	Black-and-white Warbler	14		2	1		D	Primarily breeding, rare winter coastal GA, FL	
	Yellow-breasted Chat	16		4	1		B		
	Eastern Meadowlark	16		2	5		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.

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 ("legal 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.

[3]Highest percent of breeding population recorded in temperate North America indicated by "*"; ? 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.

[5]Species listed as either Federal Endangered or Threatened.

APPENDIX B

South Atlantic Coastal Plain Bird and Habitat Assemblages (from Hunter et al. 2001, Table 4)

	Total Score	TB	TN	Notes
PRAIRIES, SAVANNAS, AND GRASSLANDS, OPEN COUNTRY				
Extremely High Priority				
Bachman's Sparrow	30	4	4	Primarily breeding
Henslow's Sparrow	29		4	FL, GA, SC(?)
High Priority				
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
Moderate Priority				
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	
Local or Regional Interest				
Eastern Kingbird	18	3	2	
Eastern Meadowlark	17	3	3	
Bald Eagle	17	3	3	
EARLY SUCCESSIONAL SHRUB-SCRUB				
Extremely High Priority				
Bewick's Wren (Appalachian)	35		5	Nearing extinction
Painted Bunting (Eastern)	31	4		GA, SC, n. FL, se NC
Bachman's Sparrow	30	4	4	Primarily breeding
Henslow's Sparrow	29		4	FL, GA, SC (?)
High Priority				
Henslow's Sparrow	26	4		NC, VA
American Woodcock	23	3	3	Primarily winter
Prairie Warbler	23	3		

Table 4 (cont.).

	Total Score	TB	TN	Notes
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	
SOUTHERN PINE (SAVANNAS, FLATWOODS, SANDHILLS)				
<u>Extremely High Priority</u>				
Red-cockaded Woodpecker	32	5	5	Cavity nesting
Bachman's Sparrow	30	4	4	Primarily breeding, ground nesting
Henslow's Sparrow	29		4	Flatwoods, savannas, ground
American Kestrel (Southeast)	28	4	3	Primarily sandhills, cavity nesting
<u>High Priority</u>				
Brown-headed Nuthatch	27	3	3	Cavity nesting
Prairie Warbler	23	3		Understory
Northern Bobwhite	22	3	3	Ground
<u>Moderate Priority</u>				
Red-headed Woodpecker	21	3	3	Primarily breeding, cavity nesting
Chuck-will's-widow	21	3		Ground, open understory
Pine Warbler	19	2	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

Table 4 (cont.).

	Total Score	TB	TN	Notes
High Priority				
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
Moderate Priority				
Yellow-billed Cuckoo	21	3		Upper midstory
Carolina Chickadee	20	2	1	Cavity nesting
"Watchlist" Species				
Kentucky Warbler	20	3		Ground nesting
Local or Regional Interest				
Acadian Flycatcher	20	3		Midstory
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
FORESTED WETLANDS (ALLUVIAL AND NON-ALLUVIAL, EXCEPT POND PINE [TALL] POCOSIN)				
Extremely High Priority				
Swallow-tailed Kite (Southeast)	28	4		Nests in "super-emergent" trees
Swainson's Warbler	28	4		Understory, forages ground
High Priority				
Short-tailed Hawk (Florida)	27	4		St. Marks to Lower Suwannee, FL
Cerulean Warbler	25	4		Roanoke River, NC
American Woodcock	23	3	3	Understory, forages ground
American Black Duck	22	4	3	Breeds VA, NC; formerly wintered to GA
Moderate Priority				
Prothonotary Warbler	21	3		Cavity nesting
Louisiana Waterthrush	21	3		Streamside
Rusty Blackbird	19		3	Roosts in trees, forages ground
Local or Regional Interest				
Wood Duck	19	3	3	Cavity nesting
Mississippi Kite	19	3		Edge nesting

Table 4 (cont.).

	Total Score	TB	TN	Notes
Bald Eagle[1]	17	3	3	
Limpkin (Florida)	17	3	3	Apalachicola, Suwannee
POND PINE (TALL) POCOSIN				
Extremely High Priority				
Red-cockaded Woodpecker	32	5	5	Cavity nesting
Swainson's Warbler	28	4		Understory, forages ground
High Priority				
Brown-headed Nuthatch	27	3	3	Cavity nesting
American Woodcock	23	3	3	Understory, forages ground
Prairie Warbler	23	3		Understory
Northern Bobwhite	22	3	3	Ground
Prothonotary Warbler	22	3		Cavity nesting
Moderate Priority				
Red-headed Woodpecker	21	3	3	Primarily breeding, cavity nesting
Rusty Blackbird	19		3	Roosts in trees, forages ground
Chuck-will's-widow	21	3		Ground, open understory
Louisiana Waterthrush	21	3		Streamside
Pine Warbler	19	2	2	
Local or Regional Interest				
Wood Duck	19	3	3	Cavity nesting
MARITIME WOODLANDS (many of the same species under pine-hardwood, but also transient landbirds and 2 breeding species)				
Extremely High Priority				
Kirtland's Warbler	35		5	
Painted Bunting (Eastern)	31	4		GA, SC, ne FL, se NC; edges
High Priority				
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	

Table 4 (cont.).

	Total Score	TB	TN	Notes
Moderate Priority				
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)				
Extremely High Priority				
Wood Stork (Southeast)	29	4	3	FL, GA, se SC
High Priority				
Brown Pelican (Southeast)	24	4	3	Coastal
White Ibis	22	4	2	
Local or Regional Interest				
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	
Snowy Egret	14	2	2	
Great Blue Heron	13	2	2	
COLONIAL GROUND NESTING WATERBIRDS (most species feeding in open water or emergent wetlands)				
Moderate Priority				
Black Skimmer	21	3	2	Beaches, dunes, rooftops
Gull-billed Tern	21	3		Marshes, protected islets
Least Tern	21	4		Beaches, dunes, rooftops
Sandwich Tern	20	3		Protected islets
Royal Tern	19	3	2	Protected islets
Local or Regional Interest				
Forster's Tern	19	3	2	Marshes, NC
Glossy Ibis	17	3	2	Marshes
Common Tern	16	3	2	Protected islets, NC

Table 4 (cont.).

	Total Score	TB	TN	Notes
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	
BEACHFRONT				
<u>Extremely High Priority</u>				
Red Knot (South Atlantic)	32		4	Mostly GA, FL
Snowy Plover (Southeast Gulf)	31	5	4	St. Joseph Peninsula to Dog Island
Piping Plover	28	4	4	Mostly winter, local breeding NC (SC?)
American Oystercatcher (Eastern North America)	28	4	4	
<u>High Priority</u>				
Wilson's Plover	26	4	4	
Purple Sandpiper	22		3	Rocky coastal areas
BEACHFRONT (CONT.)				
<u>Moderate Priority</u>				
Willet	21	3	2	
Black-bellied Plover	21		3	Many overwinter
Sanderling	21		4	Many overwinter
Ruddy Turnstone	21		4	Many overwinter

Table 4 (cont.).

	Total Score	TB	TN	Notes
Local or Regional Interest				
Peregrine Falcon	19		3	Some overwinter
ESTUARIES, MUDFLATS, AND IMPOUNDMENTS				
High Priority				
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	
Moderate Priority				
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
High Percent of Continental Population				
Semipalmated Plover	17		2	Many winter
Spotted Sandpiper	18		2	Many winter
Lesser Yellowlegs	18		2	Many winter
OPEN WATER				
Extremely High Priority				
Black-capped Petrel	32		3	Pelagic
Bermuda Petrel	32		5	Pelagic
Roseate Tern (North American)	30		3	Pelagic
High Priority				
Brant	23		3	Mostly NC
Audubon's Shearwater (Caribbean)	26		4	Pelagic
Cory's Shearwater	22		3	Pelagic
American Black Duck	22	4	3	Breeds VA, NC; formerly wintered to GA
Moderate Priority				
Canvasback	21		2	
Lesser Scaup	20		3	
Black Scoter	20		3	
Greater Scaup	19		3	

Table 4 (cont.).

	Total Score	TB	TN	Notes
Common Loon	19		3	
Red-throated Loon	19		3	Major concentrations from Back Bay, VA, to Cape Fear, NC, uncommon to rare elsewhere
<u>Local or Regional Interest</u>				
Tundra Swan	20		3	NC (especially, Mattamuskeet NWR)
Wood Duck	19	3	3	
Mallard	15	2	2	Mostly winter
Blue-winged Teal	17		2	Some overwinter
Northern Pintail	16		2	
Redhead	21		3	
Ring-necked Duck	19		3	
Surf Scoter	20		3	
White-winged Scoter	17		3	
Canada Goose (Atlantic pop.)	???			

APPENDIX C

Wildlife Conservation Commission

FLORIDA'S ENDANGERED SPECIES, THREATENED SPECIES AND SPECIES OF SPECIAL CONCERN

Official Lists

Publication Date: 1 August 1997

This document consolidates the state and federal official lists of endangered species, threatened species, and other species categorized in some way by the respective jurisdictional agencies as meriting special protection or consideration. The state lists of animals are maintained by the Florida Game and Fresh Water Fish Commission and categorized as endangered, threatened and of special concern, and constitute Rules 39-27.003, 39-27.004 and 39-27.005, respectively, Florida Administrative Code (F.A.C.). The state lists of plants are categorized into endangered, threatened and commercially exploited, and are administered and maintained by the Florida Department of Agriculture and Consumer Services via Chapter 5B-40, F.A.C. The federal lists of animals and plants are administered by the U.S. Fish and Wildlife Service and categorized into endangered and threatened, and are published in 50 CFR 17 (animals) and 50 CFR 23 (plants). The abbreviations used in part one are:

GFC = Florida Fish and Wildlife Conservation Commission
FDA = Florida Department of Agriculture and Consumer Services
FWS = United States Fish and Wildlife Service
E = Endangered
T = Threatened
T(S/A) = Threatened/Similarity of Appearance
T(E/P) = Threatened/Experimental Population
SSC = Species of Special Concern
C = Commercially Exploited

		Designated Status	
Scientific Name	**Common Name(s)**	**GFC**	**FWS**
Birds			
Ajaia ajaja	Roseate spoonbill	SSC	
Ammodramus maritimus juncicolus	Wakulla seaside sparrow	SSC	
Ammodramus maritimus mirabilis	Cape Sable seaside sparrow	E	E
Ammodramus maritimus peninsulae	Scott's seaside sparrow	SSC	
Ammodramus savannarum floridanus	Florida grasshopper sparrow	E	

		Designated Status	
Scientific Name	**Common Name(s)**	**GFC**	**FWS**
Aphelocoma coerulescens	Florida scrub-jay	T	T
Aramus guarauna	Limpkin	SSC	
Campephilus principalis	Ivory-billed woodpecker	E	E
Charadrius alexandrinus tenuirostris	Southeastern snowy plover	T	
Charadrius melodus	Piping plover	T	T
Cistothorus palustris griseus	Worthington's marsh wren	SSC	
Cistothorus palustris marianae	Marian's marsh wren	SSC	
Columba leucocephala	White-crowned pigeon	T	
Dendroica kirtlandii	Kirtland's warbler	E	E
Egretta caerulea	Little blue heron	SSC	
Egretta rufescens	Reddish egret	SSC	
Egretta thula	Snowy egret	SSC	
Egretta tricolor	Tricolored (=Louisiana) heron	SSC	
Eudocimus albus	White ibis	SSC	
Falco peregrinus tundrius	Arctic peregrine falcon	E	
Falco sparverius paulus	Southeastern American kestrel	T	
Grus americana	Whooping crane	SSC	T(E/P)
Grus canadensis pratensis	Florida Sandhill crane	T	
Haematopus palliatus	American oystercatcher	SSC	
Haliaeetus leucocephalus	Bald eagle	T	T
Mycteria americana	Wood stork	E	E
Pandion haliaetus	Osprey	SSC*	

		Designated Status	
Scientific Name	**Common Name(s)**	**GFC**	**FWS**
Pelecanus occidentalis	Brown pelican	SSC	
Picoides borealis	Red-cockaded woodpecker	T	E
Polyborus plancus audubonii	Audubon's crested caracara	T	T
Rostrhamus sociabilis	Snail kite	E	E
Rynchops niger	Black skimmer	SSC	
Speotyto cunicularia	Burrowing owl	SSC	
Sterna antillarum	Least tern	T	
Sterna dougallii	Roseate tern	T	T
Vermivora bachmanii	Bachman's warbler	E	E
*Applicable in Monroe County only			

APPENDIX D

US FISH AND WILDLIFE SERVICE SPECIES OF CONSERVATION CONCERN in the SOUTHEASTERN COASTAL PLAIN (BCR 27)

Black-capped Petrel
Audubon's Shearwater
Little Blue Heron
Reddish Egret
Swallow-tailed Kite
Short-tailed Hawk
American Kestrel (resident *paulus* ssp. only)
Peregrine Falcon
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
Le Conte's Sparrow
Nelson's Sharp-tailed Sparrow
Saltmarsh Sharp-tailed Sparrow
Seaside Sparrow
Painted Bunting
Orchard Oriole