

FINAL DRAFT

Avian Conservation Implementation Plan Gulf Islands National Seashore

National Park Service
Southeast Region



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In cooperation with

GUIS Resource Management Staff, National Park Service
and Bird Conservation Partners
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TABLE OF CONTENTS

Introduction.....	3
Background	3
The North American Bird Conservation Initiative	4
The Southeastern Bird Conservation Initiative: National Park Service	5
Role of NPS in Avian Conservation.....	5
Park Description	7
Avian Resources of the East Gulf Coastal Plain	8
Avian Conservation in GUIs.....	12
Park Identified Needs for Avian Conservation.....	13
Coordination with Regional Conservation Initiatives	14
North American Bird Conservation Initiative	14
North American Waterfowl Management Plan.....	14
Partners In Flight	14
United States Shorebird Conservation Plan	14
Waterbird Conservation for the Americas.....	16
Integration of NABCI Goals and Objectives into Park Planning and Operations: NABCI Implementation	
Recommendations	16
Inventory	17
Monitoring	17
Habitat Restoration	18
Threat Management.....	21
Research	23
Compliance	23
Outreach	24
Partners and Partnerships	25
Funding Opportunities	25
Contacts.....	28
Literature Cited.....	31
Appendixes	
East Gulf Coastal Plain Priority Species	
East Gulf Coastal Plain Priority Habitat and Species Assemblages	
Florida’s Endangered Species, Threatened Species, and Species of Special Concern 1997	
Endangered Species of Mississippi 2002	
US Fish and Wildlife Service Species of Conservation Concern (2002) in the Southeast Coastal Plain (BCR 27)	

Introduction

This Avian Conservation Implementation Plan (ACIP) is provided to the staff at Gulf Islands National Seashore (GUIS) to help identify and prioritize bird conservation opportunities, and to provide information and guidance for the successful implementation of needed conservation activities. This plan may identify goals, strategies, partnerships, and perhaps specific projects allowing the park to participate in existing bird conservation planning and implementation efforts associated with the North American Bird Conservation Initiative (NABCI). Under the auspice of NABCI, appropriate bird and habitat conservation goals may be recommended as identified in the appropriate existing national or regional bird conservation efforts aligned with this initiative: Partners In Flight (PIF), North American Waterfowl Management Plan (NAWMP), US Shorebird Conservation Plan (USSCP), and Waterbird Conservation for the Americas (WCA). For example, parks in the Appalachians and the Cumberland Plateau will have few if any 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 GUIS is coastal and largely a barrier island complex, most of the parks recommendations on bird conservation actions will be related to shorebirds and colonial waterbirds; however, all high priority bird conservation issues for GUIS will be discussed and integrated as appropriate.

Information and data presented in the ACIP have been obtained from several sources: 1) interviews with GUIS staff 2) GUIS bird conservation partners 3) the PIF East Gulf Coastal Plain Bird Conservation Plan (Ford et al. 2000), 4) NPS databases, 5) peer reviewed bird conservation and management literature, and 6) personal communications with bird conservation specialists throughout North America, especially in the southeastern United States. This plan has been reviewed by GUIS resource management staff and managers, Gulf Coast Inventory and Monitoring (GC I&M) staff, and bird conservation partners and approved by GUIS management. Optimally, this plan will be incorporated into the park's Resource Management Plan (RMP; USDI NPS 1998) and updated annually to reflect completed projects, newly identified needs, and shifts in bird conservation priorities in the region.

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

Background

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

biodiversity proponents, ecologists, land managers, etc., and the bird conservation community in general. Birds are recognized as critical components of local and global genetic, species, and population diversity, providing important and often critical ecological, social, economic, and cultural values. Their overall decline has stimulated a worldwide focus on conservation efforts, and North American interest in bird conservation is rapidly becoming a focus of government, non-government, industry, and private interests and expenditures. Many state, federal, and non-governmental wildlife agencies and non-government 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 (<http://www.nabci-us.org/main2.html>). 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 2000, 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 GUIS 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 (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 33.6 million ha (83 million acres) of land and water with associated biotic resources (www.nps.gov). The 64 units in the Southeast Region of the NPS represent 16% of the total number of park units in the national park system and cover approximately 5% of the total land base in the entire system. Park units in the Southeast Region include national seashores (Canaveral National Seashore, Cape Hatteras National Seashore), national parks (Great Smoky Mountains National Park, Everglades National Park), national recreation areas (Big South Fork National River and Recreation Area), national preserves (Big Cypress National Preserve), national battlefields (Cowpens National Battlefield, Fort Donelson National Battlefield), national monuments (Fort Matanzas National Monument, Ocmulgee National Monument), and others such as the 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 globally important 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

Gulf Islands National Seashore 55,000 ha (135,625 acres) consists of barrier islands, coastal mainland tracts, and their adjacent waters in northwest Florida and coastal Mississippi. The resources range from remote wilderness islands with limited visitation, to readily accessible recreational beaches and historic sites visited by several million

people each year. The resources and values that define the natural environment of GUIS include a diverse assemblage of wildlife, vegetative communities, and geological features and physical processes reflecting the complexity of the land/sea interface of the northeastern Gulf Coast. Seashore wildlife includes the wealth of aquatic and terrestrial species inhabiting estuarine systems plus fragile, endemic populations such as the endangered Perdido Key Beach mouse. Mainland areas within the Seashore support a variety of plant communities while the barrier islands reflect the adaptive extremes of vegetative evolution. Throughout the Seashore the relationship of land and water is paramount. From ephemeral wetlands to Gulf front beaches, the natural processes shaping the coastal environment are present in their full diversity, where change is the only constant.

The park was established in the 1970's, primarily for coastal recreation. Development surrounding the Seashore is explosive and the park unavoidably suffers the impacts of being among the top ten most visited parks in the country. Cat Island, Mississippi has recently been acquired by GUIS.

Avian Resources of East Gulf Coastal Plain

The East Gulf Coastal Plain is approximately 245,200 km² and occupies portions of Florida, Alabama, Mississippi, Louisiana, Tennessee, Kentucky, and Illinois (see PIF and NPS location maps below). Nearly 30% of the land use in the area is classified as loblolly-shortleaf pine or longleaf pine forests, and another 30% is classified as corn or soybeans. Oak-hickory and oak-pine forests occupy about 25% of the remaining land. However, this area also includes coastal areas and includes the barrier islands of Florida, Alabama, Mississippi, and Louisiana.

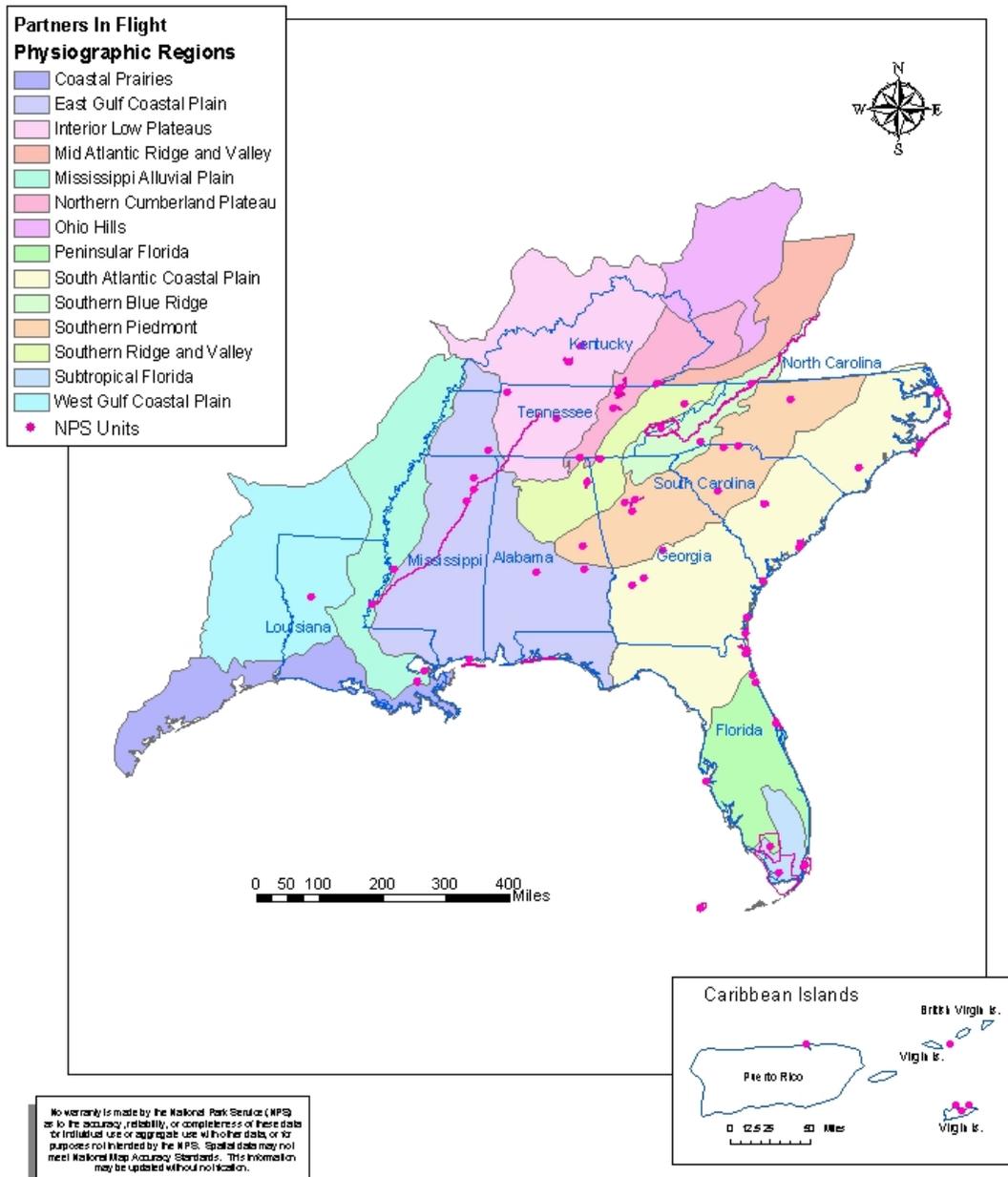
The East Gulf Coastal Plain is characterized by a diversity of bird habitats, including coastal dunes and marshes, pine flatwoods and savannas, and expansive upland and bottomland hardwood forests. The typical vegetation types can be characterized broadly as southern mixed forest, oak hickory-pine, and southern yellow pine, mixed with intervening floodplain forests. Live oak forests and coastal dune habitats occur along the coast. Ecological forces include disturbances such as fire, ice storms, windstorms, tornados, and flooding. Elevation ranges from 0 to 650 feet above sea level. Annual precipitation ranges from 40 to 60 inches generally, and 52 to 64 inches on the Florida coast.

For ecological planning, the East Gulf Coastal Plain is divided into the lower, middle, and upper units. The lower unit includes the barrier islands and coast to about 200 km inland and stretches from panhandle Florida to south Louisiana. The lower unit is characterized by predominantly flat, weakly dissected alluvial plains, and active coastlines. Quaternary geology and soils are typically Pliocene-Pleistocene sandy clay residuum. Predominant upland vegetation is slash and longleaf pine forest (including longleaf pine-turkey oak stands). Sand pine is the dominant canopy species in the xeric and deep sand areas of panhandle Florida and south Alabama.

Partners in Flight (PIF) Regions

Southeast Region (SER)

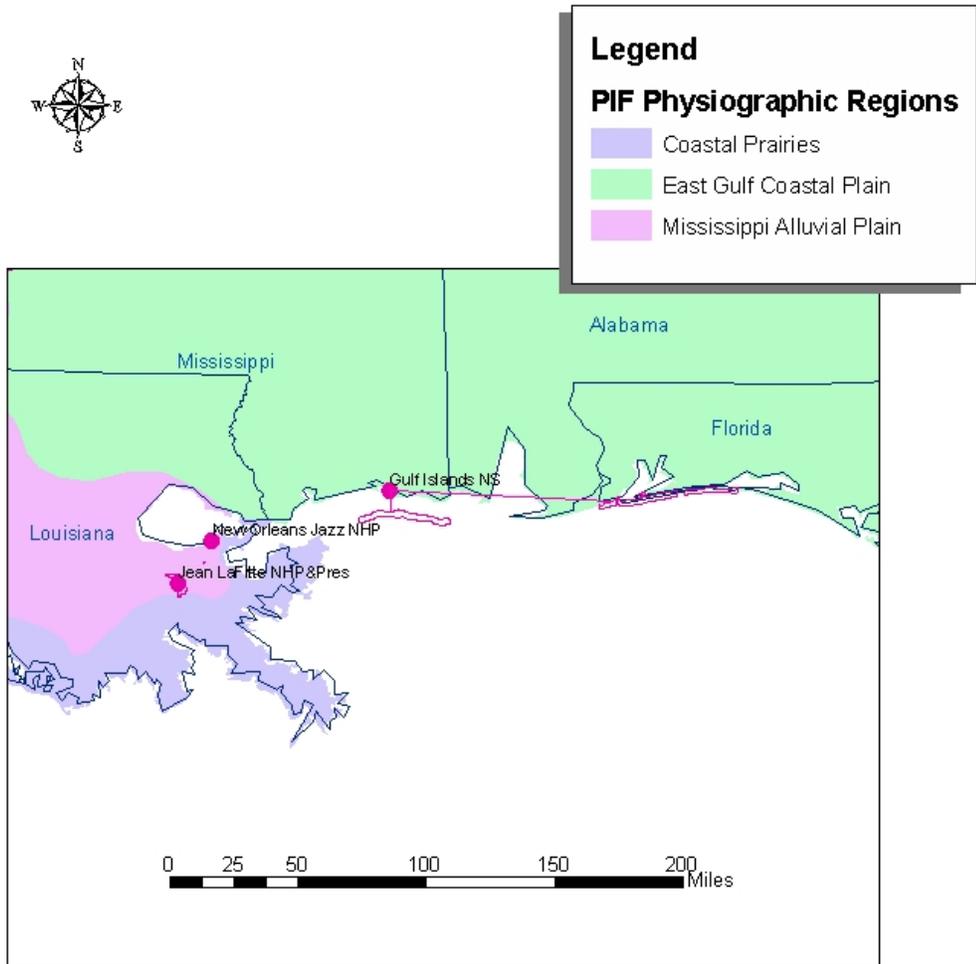
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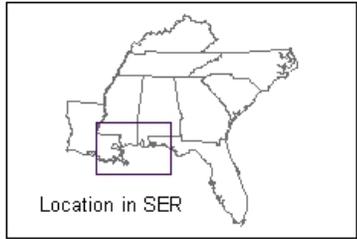
Partners in Flight (PIF) Regions and NPS Locations

Southeast Region

National Park Service
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The middle unit is delineated by a line which runs roughly east-west from approximately 20 km south of Jackson, Mississippi to near Birmingham, Alabama and extends north to the Mississippi-Tennessee state line. The middle unit is characterized by moderately dissected, irregular plains. Quaternary geology and soils are typically Quaternary, Cenozoic sand, chert or clay deposits. Primary vegetation types include expanses of oak-hickory-pine in a variety of successional stages, the open grasslands of the Black Belt and Jackson Prairie, and floodplain forests. Major rivers include tributaries to the Mississippi River, such as the Pearl and Yazoo Rivers, and other rivers such as the Alabama and Tombigbee in Alabama. Oak-hickory-pine forest is the most prevalent forest type through the middle unit of the East Gulf Coastal Plain; most pine forests consist of loblolly-shortleaf.

The upper unit roughly coincides with the Mississippi-Tennessee state and includes west Tennessee, west Kentucky, and parts of Illinois. The upper unit is characterized by flat to gently rolling uplands dissected by broad alluvial floodplains. Quaternary geology and soils are generally Wisconsin, Illinois loess and loess alluvium. Primary vegetation was typically upland oak hickory forests dissected by broad floodplain forests and patches of open grasslands. Major river systems are tributaries to the Mississippi River and include the Wolf, Hatchie, Forked Deer, and Obion Rivers. Oak-hickory forests dominate the forest cover in the upland areas of the upper unit of the East Gulf Coastal Plain.

Conservation Opportunities:

Management of landscapes for bird conservation priorities may include three strategies:

- 1) manage and maintain existing habitats identified as being of value to bird populations
- 2) restore or consolidate important habitats and
- 3) provide a combination of these two strategies.

For the East Gulf Coastal Plain, a combination of strategies will be required to increase and sustain breeding bird populations.

Over 300 bird species occur annually in the East Gulf Coastal Plain as nesting species, post nesting dispersal species, transients, and/or wintering residents. Over 180 of these nest in the physiographic area. Representative nesting species include Eastern Meadowlark, Field Sparrow, Eastern Towhee, Prothonotary warbler, Red-bellied Woodpecker, Yellow-breasted Chat, Red-winged Blackbird, Indigo Bunting, and Great Crested Flycatcher. Breeding bird species richness varies across typical rural landscapes in the East Gulf Coastal Plain. In the upper unit of the East Gulf Coastal Plain, approximately 100 breeding bird species occur in a county. In the middle unit, approximately 100 breeding bird species occur in a county. In the lower unit along the

coast, approximately 120 breeding bird species occur in a county (Toups and Jackson 1987).

Avian Conservation in GUIS

Avian Biodiversity: GUIS has an avian inventory and a checklist of birds that is available for the public. The checklist was compiled from information dating back to 1965. Over 300 species of bird have been recorded in the park, including Federally endangered and threatened species, state listed species, and many vagrants. The park is perhaps best known for its importance to trans-Gulf migrants in the spring. Additionally, the park's status as an Important Bird Area was based on other important factors, including Bald Eagle nesting, the highest number of breeding Snowy Plovers on the Gulf Coast, other beach nesting birds, high concentrations of Ospreys, and wintering Piping Plovers (Woodrey unpublished data).

Verified records of birds in GUIS 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: GUIS is one of nine parks in the NPS Gulf Coast I&M Network for which a plan to conduct high priority inventory projects has been prepared (USDI 2000). Although GUIS avian inventory is considered complete in relation to the NPS's I&M goals, information on relative abundance and distribution of certain birds is desired, particularly for poorly known avifauna of the park and birds of high conservation priority in the region. Several high priority PIF species for the East Gulf Coastal Plain occur in GUIS (see below and Appendixes B and C). Prominent among these species are Nelson's Sharp-tailed Sparrow, Piping Plover, Bald Eagle, Snowy Plover, Brown-headed Nuthatch, Seaside Sparrow, Wilson's Plover, Reddish Egret, Prairie Warbler, Brown Pelican, American Oystercatcher, and Willet.

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

- Shorebird Surveys are conducted from fall (October or November) to spring (March or April) using all terrain vehicles with count stops every one-half mile
- Piping Plover survey are conducted during migration and winter in conjunction with shorebird surveys
- Osprey nests are surveyed and monitored for chicks and fledging success
- Snowy Plover nest surveys are conducted during periods of high public use or special events in the spring and summer at high visitor use locations and where predators are prevalent
- Portions of two Christmas Bird Count (CBC) circles are within the park and conducted by volunteers
- Breeding Bird Surveys (BBS) are occasionally conducted by volunteers

Research: Scientific research is permitted within the park, but no active avian research other than existing avian inventory and monitoring is ongoing. However, a mercury assessment is being conducted which may lead to a link between mercury levels and poor Osprey fledging rates.

Threatened and Endangered Species: Several Federally listed threatened or endangered species occur in GUIs. The Federally threatened Bald Eagle is known to nest in the park and most Gulf Coast and barrier island Bald Eagle nests are believed to have been generated from extensive Bald Eagle hacking in the 1980' and 1990's. The threatened Brown Pelican occurs in Mississippi and wintering Piping Plover occur on several of the barrier islands. The delisted Peregrine Falcon occurs as a migrant and occasional winter resident (Woodrey unpublished data).

Several **Florida and Mississippi Endangered, Threatened, and Species of Special Concern** occur in GUIs including Least Tern, Black Skimmer, Southeastern Snowy Plover, Peregrine Falcon, American Oystercatcher, Osprey, and Brown Pelican. Perhaps the largest population of the threatened Southeastern Snowy Plover occurs in the park, primarily on Horn Island. The conservation of these and other species of high conservation concern (Table 1 and Table 2) should be coordinated with appropriate state personnel (see Contacts). Setting priorities for bird conservation presents some unique challenges because the park lies within the States of Florida and Mississippi.

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

Park Identified Needs for Avian Conservation

GUIs has identified several projects that would increase the ability of the park to better protect its avian resources.

Inventory:

- **Avifaunal surveys of recently acquired Cat Island are necessary to plan for conservation of the birds and their habitats**

Monitoring: The park would like to:

- **improve the ability to survey for wintering Piping Plover**
- **determine use of habitats and fallouts during spring migration of Neotropical migrants**
- **develop monitoring strategy for Cat Island in Mississippi**
- **establish comprehensive plover surveys (Piping, Snowy, and Wilson's)**

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, GUIS is within the NABCI Southeast Coastal Plain that extends from Virginia to Louisiana (see BCR map below) and encompasses several PIF physiographic areas (the planning unit for PIF)(compare to PIF map).

Several NABCI BCR's have coordinators whose primary responsibility is to coordinate all bird conservation planning in the BCR, across all agencies and organizations. Currently, the Southeast Coastal Plain does not have a designated coordinator; however, several bird conservation coordinators for the Southeast Coastal Plain, primarily affiliated with Joint Ventures and State PIF coordinators (see contacts below) and can provide valuable assistance to GUIS with implementation of aspects of this ACIP. Active bird conservation planning is underway in the East Gulf Coastal Plain and the adjacent Mississippi Alluvial Valley BCR (see contacts below) and communications with this coordinator will be important to fully assess the park's role in regional and landscape scale bird conservation.

North American Waterfowl Management Plan (NAWMP): The NAWMP (<http://northamerican.fws.gov/NAWMP/nawmphp.htm>) is completed and has been revised several times, incorporating updated goals and strategies based on new information. This plan is one of the most successful bird conservation delivery programs in the United States, being monetarily supported by the North American Wetlands Conservation Act (NAWCA).

Partners In Flight: Goals and strategies for the East Gulf Coastal Plain can be found in the draft bird conservation plan (Ford et al. 2000). The park will receive updates of the plan as they are completed. The current plan identifies priority bird and habitat conservation goals that must be implemented in order to achieve bird conservation success in this region.

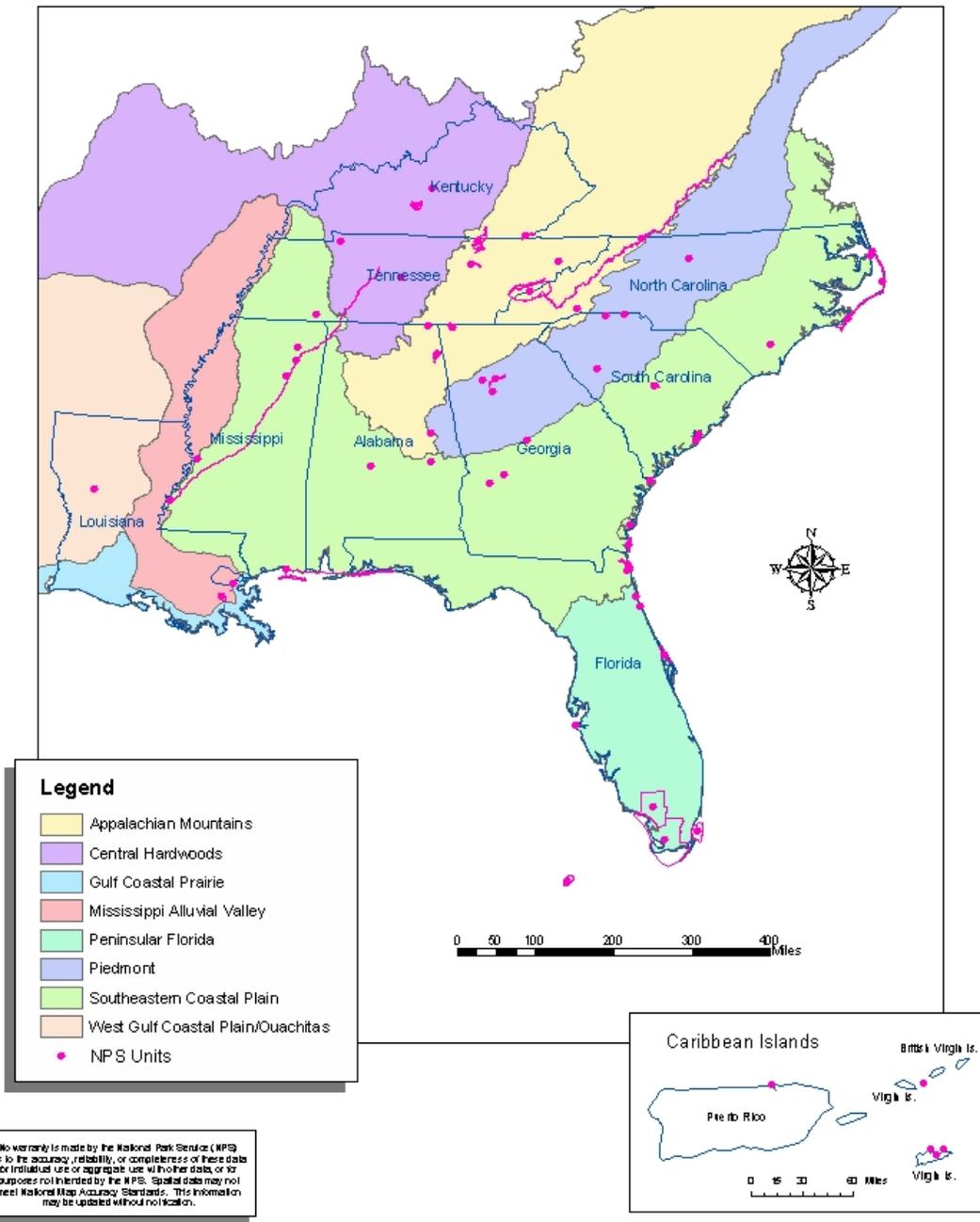
Similar to NABCI BCR's, PIF physiographic areas often do not have designated coordinators. However, state level non-game agencies with investment in PIF will establish key personnel to develop partnerships among cooperators in the physiographic area. The States of Florida and Mississippi each have a PIF coordinator and can be instrumental in assisting GUIS to implement recommendations identified in this ACIP and projects important to bird conservation relative to Florida's and Mississippi's role in implementation of the East Gulf Coastal Plain PIF plan.

United States Shorebird Conservation Plan (USSCP): The USSCP has been completed and is available on the World Wide Web (<http://shorebirdplan.fws.gov/>). A regional step down plan is in preparation by FWS personnel and should be available in 2003. The developing regional shorebird plan will be important for GUIS since many of

Bird Conservation Regions

Southeast Region (SER)

National Park Service
U.S. Department of the Interior



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the park's avian resources are related to its shoreline and shorebird use, during all seasons.

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. The developing regional colonial waterbird plan will be important for GUIS since the park is a primary nesting site for colonial waterbirds in the panhandle of Florida and Mississippi.

Integration of NABCI Goals and Objectives into Park Planning and Operations

NABCI Implementation Recommendations

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

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

To the extent appropriate, each of these program areas will be discussed separately and within each, specific opportunities identified that, when implemented, will enable to park to meet its mandates (current and expected), as well as integrate NABCI into its planning and operations. With emphasis added; the park is not expected to implement any of these recommendations or be obligated to pursue any opportunity other than those the park is required to do by law or NPS program or policy. In other words, participation in this effort is currently voluntary. However, participation in these efforts at some level could become mandatory with the completion of an MOU with the FWS regarding EO 13186 (US Government 2000). The MOU will establish a formal agreement between the FWS and the NPS 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. Nonetheless, additional data are needed to fully understand the status of birds in the park so that conservation actions can be implemented. Information regarding the status of high priority species (as identified in the East Gulf Coastal Plain bird conservation plan and the Florida and Mississippi lists of Endangered Species) 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 are lacking***
- **to expand Snowy Plover surveys to cover entire barrier islands to determine estimate of total number of breeding pairs in the seashore***
- **to detect extent of Wilson's Plover nesting***
- **in pine woodlands, particularly Naval Live Oaks area, for neotropical migrants, residents, and breeding birds of high priority conservation concern***

Additionally, GUIS is encouraged to:

- **partner with the States of Florida and Mississippi, Bon Secour and Grand Bay National Wildlife Refuges, and Department of Defense (Eglin Air Force base) to coordinate area inventory efforts**
- **standardize inventory and monitoring methodology to conform to NPS and/or FWS recommended standards (Fancy and Sauer 2000; Hunter 2000)**

Monitoring: The park has an active bird monitoring program, resulting in the documentation of many high priority species. Efforts should be made to continue existing monitoring programs, striving to conform to established NPS or FWS survey

protocols. In addition, the park is encouraged to consider establishing permanent monitoring stations in main habitat types that are currently poorly represented 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 Gulf Coast Joint Venture Coordinator and States of Florida and Mississippi 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:

- **continue to conduct existing monitoring levels of Snowy Plover, Bald Eagle, Piping Plover, Osprey, and shorebird surveys and**
- **share these data with Florida and Mississippi shorebird or Partners in Flight coordinators***
- **hire additional staff to support needed monitoring programs***
- **improve ability to survey additional shoreline for shorebirds during migration and winter using International Shorebird Survey (ISS) protocol especially wintering Piping Plover**
- **begin to count colonial nesting beach birds such as Black Skimmers, terns, and herons and egrets, especially on newly acquired Cat Island and**
- **share these data with Florida and Mississippi Partners In Flight coordinators***
- **monitor a subset of Snowy Plover nests to determine relative production of Snowy Plover population in seashore**
- **begin monitoring Wilson's Plovers**
- **establish appropriate forest point counts monitoring following inventory in Naval Live Oaks and other woodlands**
- **continue to support Christmas Bird Counts and work with count circle coordinators to extract seashore data from entire circle area, if different**

- **partner with States of Florida and Mississippi, Bon Secour and Grand Bay National Wildlife Refuges, and Department of Defense (Eglin Air Force base) to coordinate area monitoring efforts**
- **obtain data from Breeding Bird Survey (BBS) routes for evaluation**
- **encourage accurate documentation and reporting of bird observations by visitors (see Cornell University's eBird monitoring program (Cornell Lab. Ornith. 2002 (<http://www.ebird.org/about/index.jsp>))**
- **cooperate with States of Florida and Mississippi to conduct waterfowl surveys on during routine mid-winter waterfowl surveys and at other key times (pre- and post-hunting season)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 today 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 GUIs.

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 GUIs 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 GUIs can greatly contribute to established habitat goals identified in the East Gulf Coastal Plain bird conservation plan and regional shorebird and colonial waterbird conservation plans.

The park is largely a barrier island system with associated vegetation communities along a gradient from the Gulf of Mexico to the Santa Rosa Sound, Mississippi Sound, and Pensacola Bay. Much of this habitat provides suitable area and vegetative cover for nesting landbirds, but could be improved through management of vehicle pressures, recreational uses and management of predation pressures. Specific recommendations are to:

- **restore natural character and function of the beach front and dune systems by**
 - **allowing natural processes to shape landscape features:**
 - **retain as many overwash fans as possible following storms events such as tropical storms, hurricanes, and northeasters**
 - **retain and protect inlet flats when new inlets are formed**
 - **protect new overwash fans and inlet flats from ORV use**
 - **managing vehicle use to eliminate disturbance to birds nesting, foraging, and resting on the beach and overwash fans**
- **preserve all remaining maritime forest and shrub-scrub areas for resident landbirds, neotropical migratory birds for breeding and migration stopover**
- **restore hydrology to seashore**
- **use prescribed burning as appropriate to improve habitat structure and productivity, especially in salt marshes and maritime forests**
- **set aside vehicle and pedestrian free areas for shorebird migration and winter resting and foraging areas**
- **protect existing snag trees, where not identified as a safety hazard, as important to cavity nesting birds**

- **enhance soundside and marsh water quality to support aquatic biota necessary to support existing aquatic invertebrates and fish as food sources for waterbirds**
- **consider creation of a colonial bird nesting island using dredge material from local sources**
- **work with the local community and other land conservation interests in the region to minimize habitat fragmentation and potentially restore habitats beneficial to wildlife and bird species of the region**
- **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: Potentially the greatest impacts to birds and their habitat at GUIS are vehicles, recreational visits, and predators in areas where birds nest, forage, migrate, and rest. The immediate threat of vehicles driving a maintained paved road through nesting areas needs to be resolved immediately. Additionally, GUIS is one of five national seashores that provide almost 95,000 ha (235,000 acres) of barrier island habitat in the Southeastern United States (does not include South Florida or the Caribbean parks), which provide and support nesting by many colonial waterbirds and shorebirds of high conservation concern. Growing recreational demand on national seashores due to shrinking availability of these habitats elsewhere results in increased conflicts between recreational use and resource protection of the seashore. National seashores, including GUIS, may be realized as one of the few nationally protected areas where these birds may continue to find adequate areas for breeding, foraging, migrating, and wintering and thus, essential to their conservation. Yet, unless these national seashores are protected, the bird communities that have used these shores for decades, if not centuries, may disappear. The park is strongly encouraged to:

- **manage vehicular traffic along the paved road from the park boundary in Gulf Breeze to Fort Pickens area, considering reduction of vehicle speed and alternative transportation (mass transport) through this area***
- **manage recreational uses of the seashore, including personal watercraft, kayaking, canoeing, kite boarding, fireworks, etc. to avoid or minimize disturbance to nesting, foraging, migrating, and wintering colonial waterbirds and shorebirds***

- **close access to bird nesting or other posted closed areas when law enforcement officers are not available and at night**

Impact of introduced species on birds, particularly feral cats and unleashed dogs, and fox and coyote at GUIS is well documented. GUIS is encouraged to develop Predator Management Guidelines similar to those developed at Cape Hatteras National Seashore (USDI 2002). Additionally, Cape Hatteras National Seashore has recently completed a feral cat reduction campaign (Altman 2002, Harrison 2002); GUIS is encouraged to obtain this report and consider implementation of a similar program. Specifically, GUIS is encouraged to:

- **continue to work with adjacent landowners and neighbors, the local community, and public officials to curb unregulated and free roaming feral and domestic dogs and cats in the park***
- **aggressively manage the seashore's predators of colonial seabirds and shorebirds***
- **develop Predator Management Guidelines***
- **hire additional law enforcement officers to provide protection for beach nesting, foraging, migrating, and wintering birds***

The US Department of Agriculture, Agricultural and Plant Health Inspection Services (APHIS) Wildlife Services unit (WS) is available to provide assistance with feral animal reduction capability (see contacts).

Although no significant exotic plants species are negatively impacting habitat at GUIS, it is important to establish and continue inventory and monitoring for exotic plant species, especially the occurrence of Phragmites. If necessary, consult with regional Exotic Plant Management Team (EPMT) to remove exotic plant species. Currently, no EPMT provides service the GUIS area. Until an EPMT is established that can provide assistance to GUIS, staff is directed to consult with the regional pest management specialist (see contacts). Additional information on the North Carolina exotic plant pest council and opportunities to evaluate threats from exotic plant species can be found at <http://www.se-eppc.org/>.

Additionally, the park is encouraged to:

- **consult with the US Navy to consider elimination or replacement of the large tower on Horn Island**
- **prevent construction of new towers in the seashore**

- **provide maximum protection of potential nest areas during courtship and nest selection process**
- identify threats from low flying aircraft and potential expansion of Military Operation Areas (MOA)
- nominate Gulf Islands National Seashore as a Western Hemisphere Shorebird Reserve Network Site (WHSRN) (<http://www.manomet.org/WHSRN/>)
- evaluate possibilities to reduce or eliminate fish hook in Brown Pelican and herons

Research

- **identify habitats important for neotropical migratory bird resting and foraging***
- **determine causes for poor Osprey fledging rate***
- **list park needs and projects on Research Permit and Reporting System web site (RPRS)**
- develop contact with Gulf Coast Cooperative Ecosystem Studies Unit (CESU) at Texas A&M University (<http://gccesu.tamu.edu/>)

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

- **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 Bon Secour or Grand Bay National Wildlife Refuges, Department of Defense (Eglin Air Force base), and States of Florida and Mississippi**
- **conduct bird walks, especially during migration and breeding seasons**
- **encourage accurate documentation and reporting from these and random outings by visitors (see Cornell University's eBird monitoring program (Cornell Lab. Ornith. 2002 (<http://www.ebird.org/about/index.jsp>))**
- **update park brochures on bird conservation activities**
- **encourage development of 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**
- **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>)**
- **links bird conservation and management literature from park to park's web site home page**
- **coordinate colonial seabird management and information with other agencies that provide habitat for these birds, and in particular other national seashores and local wildlife refuges**
- **nominate GUIS as an Western Hemisphere Shorebird Reserve Network Site (WHSRN)**
- **work with adjacent landowners and neighbors, the local community, and public officials to curb unregulated and free roaming feral and domestic dogs and cats in the park**
- **park interpretation/education staff are encouraged to attend USFWS training on Migratory Bird Education at NCTC**

- subscribe to MISSBIRD, a Mississippi birding listserv, an electronic bulletin board for news, questions and information about birds and birding in Mississippi
- subscribe to NFLBIRDS, an electronic forum for listing bird sightings and various bird information in North Florida (<http://nflbirds.listbot.com>)
- 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:

- **keep abreast of local and/or county initiatives or programs that could impact park resources***
- **explore partnership and potential cooperative programs with Gulf Coastal Plain Ecosystem Partnership (GCPEP) and Gulf Coast Joint Venture**
- **develop and strengthen relationship with local bird clubs for potential cooperation and implementation of segments of this plan***
- **develop partnerships with States of Florida and Mississippi, local national wildlife refuges, Department of Defense to develop cooperative projects for bird conservation**
- 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. Funding for conservation projects for Neotropical migrants is available through the Park Flight program. GUI is encouraged to enter all high priority projects into the NPS Performance Management Information System (PMIS) database. Suggestions include to:

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

With the exception of the North American Waterfowl Management Plan (NAWMP and its associated funding legislation, the North American Wetland Conservation Act), funding opportunities for bird conservation programs, plans, and initiatives have been lacking. Only within the last decade have other appropriate and specific sources for bird conservation funding been created and used. The NAWMP has been supported for approximately 14 years by the North American Wetlands Conservation Act (NAWCA 1989). This program has provided \$487 million in appropriated funds matched with \$1.7 billion for wetland and bird conservation projects since its inception. In 2002 alone, over \$70 million US dollars were awarded to US and Canadian agencies and organizations to enhance waterfowl populations by improving, restoring, or protecting wetland habitats. To adequately evaluate projects and distribute these funds, partnerships called Joint Ventures were established. Nationally, 14 (11 US, 3 Canada) Joint Ventures have been established, several which are funded and staffed.

The Gulf Coast Joint Ventures is very active in bird conservation in the East Gulf Coastal Plain and is a primary contact for potential funding (<http://southwest.fws.gov/gulfcoastjv/Default.htm>). Additional Internet links to Joint Ventures are:

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

Funding through NAWCA is highly underutilized by the NPS and any park unit that has wetland, water, or bird conservation needs associated with wetland are encouraged to investigate using this funding source. Naturally, there are certain requirements to be eligible for all grants and park managers are encouraged to consult with the nearest Joint Venture, BCR, or PIF Coordinator to learn how this program might be applicable to implementation of this plan, and other park wetland issues.

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. GUI is encouraged to become a member of the Central Gulf and Northeast Gulf Ecosystem Teams of the US Fish and Wildlife Service (see contacts).

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 have recently been authorized under the Neotropical Migratory Bird Conservation Act (2000) (<http://www.nfwf.org/programs/nmbcapp.htm>). Appropriations through this Act are authorized up to \$5 million per year. However, in 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 GUIs are:

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APPENDIX A
Priority Species for the East Gulf Coastal Plain

Table 1. Priority bird species listed by total Partners in Flight concern score, and segregated by entry criteria. Other measures include area of importance and population trends scores, percent of BBS population, and local migratory status.

Priority Entry Criteria & species	Total PIF score	Concern scores		Percent BBS	Local migratory status
		AI	PT		
Ia. Highest overall priority					
Mississippi Sandhill Crane	35	5	5	-	RP
Red-cockaded Woodpecker	31	4	4	11.0	RP
Bachman's Sparrow	30	5	5	28.1	D
Nelson's Sharp-tailed Sparrow	29	5	3	-	C
Golden-winged Warbler	29	4	5	-	A
Henslow's Sparrow	29	4	5	-	F
Black Rail	28	4	4	-	D
Swallow-tailed Kite	28	4	3	-	E
Bewick's Wren	28	3	5	8.0	E
Piping Plover	28	4	4	-	C
Salt Marsh Sharp-tailed Sparrow	28	3	3	-	C
Swainson's Warbler	29	5	3	13.3	B
Ib. High overall priority					
American Kestrel	27	4	4	-	E
Snowy Plover	27	4	5	-	E
Brown-headed Nuthatch	26	5	4	16.6	R
Cerulean Warbler	26	3	3	11.7	E
Seaside Sparrow	26	5	3	-	E
Yellow Rail	26	4	3	-	C
Bicknell's Thrush	25	4	3	-	A
Prothonotary Warbler	25	4	5	9.5	B
Chuck-will's-widow	24	5	5	11.8	B
Prairie Warbler	24	4	5	7.4	B
Reddish Egret	24	2	3	-	E
Wilson's Plover	24	5	4	-	E
Worm-eating Warbler	24	3	3	1.6	E
Blue-winged Warbler	24	5	3	-	A
Bay-breasted Warbler	24	5	3	-	A
Bobolink	24	5	5	-	A
Red Knot	24	3	4	-	A
Stilt Sandpiper	24	3	3	-	A
Buff-breasted Sandpiper	24	3	3	-	A
Black-throated Blue Warbler	23	3	3	-	A
Bell's Vireo	23	2	3	-	B
American Black Duck	23	4	5	-	D
Redhead	23	5	4	-	C
Marbled Godwit	23	3	4	-	C

Priority Entry Criteria & species	Total PIF score	Concern scores		Percent BBS	Local migratory status
		AI	PT		
Short-billed Dowitcher	22	3	4	-	C
Black Tern	22	5	5	-	A
Kentucky Warbler	22	4	2	9.8	B
Orchard Oriole	22	5	5	9.3	B
Brown Pelican	22	4	1	80.2	RP
Clapper Rail	22	5	3	27.7	RP
American Oystercatcher	22	5	3	-	RP
Willet	22	4	5	-	RP
Northern Bobwhite	22	5	5	-	R
Yellow-billed Cuckoo	22	5	5	7.1	B
Red-headed Woodpecker	22	4	5	3.3	D
American Woodcock	22	4	4	-	D
Sedge Wren	22	5	5	-	C
Veery	22	5	5	-	A
Palm Warbler	22	5	5	-	A
Canada Warbler	22	4	3	-	A

II. Physiographic area priority species

Chimney Swift	21	4	5	-	B
Eastern Wood-Pewee	21	4	5	-	B
Loggerhead Shrike	21	4	5	-	D
American Bittern	21	4	5	-	D
King Rail	21	5	3	-	D
Black Skimmer	21	4	5	71.7	E
Canvasback	21	4	4	-	C
Semipalmated Sandpiper	21	4	5	-	A
Black-billed Cuckoo	21	5	3	-	A
Least Flycatcher	21	5	5	-	A
Chestnut-sided Warbler	21	5	3	-	A
Black-throated Green Warbler	21	5	3	-	A
Blackpoll Warbler	21	5	3	-	A
Rusty Blackbird	21	5	5	-	C
Northern Harrier	20	4	4	-	C
Sanderling	20	3	5	-	A
Common Ground-Dove	20	4	4	9.1	R
Purple Martin	20	5	5	11.2	B
Carolina Chickadee	20	4	5	6.7	R
Field Sparrow	20	3	5	-	R
Gull-billed Tern	20	5	3	23.6	E
Sandwich Tern	20	5	3	-	E
Dunlin	20	4	5	-	E
Royal Tern	19	5	3	32.1	E
Least Tern	19	4	4	63.8	E
Eastern Kingbird	19	4	5	-	B
Common Loon	19	5	3	-	C

Priority Entry Criteria & species	Total PIF score	Concern scores		Percent BBS	Local migratory status
		AI	PT		
III. Additional species: global priority					
Wood Thrush	21	4	2	5.7	B
Louisiana Waterthrush	21	3	2	3.7	B
IV. Additional species: abundant and declining in the physiographic area					
Downy Woodpecker	18	5	5	-	R
Eastern Meadowlark	18	4	5	-	D
Blue Jay	17	5	5	-	D
Common Grackle	15	4	5	-	D
Mourning Dove	14	4	5	-	D
V. Additional species: responsibility for monitoring (>10% BBS)					
White-eyed Vireo	20	5	2	13.3	B
Hooded Warbler	20	4	1	13.9	B
Summer Tanager	19	5	2	10.9	B
Fish Crow	18	4	3	21.2	D
Red-bellied Woodpecker	18	5	2	10.0	R
Pine Warbler	18	5	1	11.8	D
Yellow-breasted Chat	17	5	1	13.5	B
Eastern Towhee	17	5	2	12.3	D
VI. Federal listed species					
Bald Eagle	18	3	3	-	D
VII. Local, state, or regional interest species					
Painted Bunting	21	3	4	-	D
Ovenbird	17	2	3	-	B
Shiny Cowbird	10	1	3	-	D
Brown Creeper		????			D
Wood Stork		????			?

Migration status key:

- A = transient species, breeds and winters outside of physiographic area.
- B = breeds in temperate or tropical areas including the physiographic area, but winters exclusively outside the region.
- C = Breeds outside of the physiographic area, but winters in physiographic area.
- D = Breeds and winters in the physiographic area, but two different populations may be involved.
- E = Species reaching distributional limits in the physiographic area as breeding populations, but above peripheral status.
- F = As E above, but for wintering species.
- R = Resident, generally non-migratory species.
- RP = Resident, generally non-migratory species reaching distributional limits in the physiographic area, but above peripheral status.

APPENDIX B

Species Assemblages and Priorities in the East Gulf Coastal Plain

Table 2. Bird species assemblages designated for broad habitat type within the physiographic area, and listed by total Partners in Flight score. The sum of Area Importance, Population Trend, and Threats to Breeding are included as the Habitat Score, and provides as an indication of the importance of the habitat in the area. The overall score indicates management criteria, see below. Habitat suitability is derived from Hamel (1995).

Habitat	Species	Total PIF score	Habitat score	Overall score	Habitat suitability	
Grasslands	Mississippi Sandhill Crane	35	15	I, V		
	Bachman's Sparrow	30	14	II, V		
	Henslow's Sparrow	25	9	II, V		
	Bobolink	24	-	III		
	Northern Bobwhite	22	13	III		
	Sedge Wren	22	-	VI		
	Loggerhead Shrike	21	13	II, V		
	Field Sparrow	20	11	IV		
	Northern Harrier	20	-	IV		
	Eastern Kingbird	19	12	IV		
	Eastern Meadowlark	18	12	VI		
	Early succession,	Bewick's Wren	28	12	II, V	
	Scrub-shrub	American Kestrel	27	12	II, V	
	Old field	Prairie Warbler	25	13	III	
Bell's Vireo		23	9	III		
LeConte's Sparrow		23	-	III		
American Woodcock		22	11	III		
Loggerhead Shrike		21	13	II, V		
Rusty Blackbird		21	-	VI		
Painted Bunting		21	9	VI		
White-eyed Vireo		20	10	VI		
Field Sparrow		20	11	VI		
Northern Harrier		20	-	IV		
Yellow-breasted Chat		17	9	VI		
Eastern Towhee		17	10	IV		
Mourning Dove		14	10	IV		
Shiny Cowbird		10	5	VI		
Forested wetlands	Swainson's Warbler	29	12	III, V		
	Swallow-tailed Kite	27	12	II, V		
	Cerulean Warbler	26	10	I, V		
	Prothonotary Warbler	25	12	III		
	Kentucky Warbler	23	10	III		
	Yellow-billed Cuckoo	22	13	III		
	Eastern Wood-Pewee	21	12	VI		
	Carolina Chickadee	20	11	VI		
	Summer Tanager	19	10	VI		
	Red-bellied Woodpecker	18	9	VI		

Habitat	Species	Total PIF score	Habitat score	Overall score	Habitat suitability
	Bald Eagle	18	9	III	
	Fish Crow	18	9	VI	
	Downy Woodpecker	18	12	VI	
	Mourning Dove	14	10	IV	
	Blue Jay	17	11	VI	
	Common Grackle	15	10	VI	
	Brown Creeper		??	VI	
	Wood Stork		??	VI	
Oak-hickory	Swallow-tailed Kite	27	12	II, V	
Loess Bluffs	Cerulean Warbler	26	10	I, V	
TN Plateau	Chuck-will's widow	24	13	II, V	
Mixed Pine	Worm-eating Warbler	24	9	III	
	Kentucky Warbler	23	10	III	
	Orchard Oriole	23	14	IV	
	Yellow-billed Cuckoo	22	13	III	
	Eastern Wood-Pewee	21	12	VI	
	Carolina Chickadee	20	11	VI	
	Hooded Warbler	20	10	III	
	Summer Tanager	19	10	IV	
	Downy Woodpecker	18	12	VI	
	Red-bellied Woodpecker	18	9	VI	
	Blue Jay	17	11	VI	
	Ovenbird	17	7	VI	
	Common Grackle	15	10	VI	
Loblolly-Shortleaf	Red-cockaded Woodpecker	31	13	I, V	
	Bachman's Sparrow	30	14	II, V	
	American Kestrel	27	12	II, V	
	Brown-headed Nuthatch	27	13	III	
	Chuck-will's widow	24	13	II, V	
	Orchard Oriole	23	14	IV	
	Yellow-billed Cuckoo	22	13	III	
	Northern Bobwhite	22	13	III	
	Eastern Wood-Pewee	21	12	VI	
	Carolina Chickadee	20	11	VI	
	Eastern Kingbird	19	12	VI	
	Summer Tanager	19	10	VI	
	Downy Woodpecker	18	12	VI	
	Red-bellied Woodpecker	18	9	VI	
	Blue Jay	17	11	VI	
	Eastern Towhee	17	10	IV	
	Mourning Dove	14	10	III	
Longleaf - Flatwoods Sandhills	Mississippi Sandhill Crane	35	15	I, V	
	Red-cockaded Woodpecker	31	13	I, V	
	Bachman's Sparrow	30	14	II, V	

Habitat	Species	Total PIF score	Habitat score	Overall score	Habitat suitability
Slash Savanna	Brown-headed Nuthatch	27	13	III	
	Prairie Warbler	25	13	III	
	Henslow's Sparrow	25	9	II, V	
	Orchard Oriole	23	14	IV	
	Northern Bobwhite	22	13	III	
	Eastern Wood-Pewee	21	12	VI	
	Carolina Chickadee	20	11	VI	
	Eastern Kingbird	19	12	IV	
	Summer Tanager	19	10	VI	
	Downy Woodpecker	18	11	VI	
	Red-bellied Woodpecker	18	9	VI	
Short-rotation Pine	Blue Jay	17	11	VI	
	Bachman's Sparrow	30	14	III, V	
	Bewick's Wren	28	12	II, V	
	Prairie Warbler	25	13	III	
	Northern Bobwhite	22	13	III	
	Field Sparrow	20	11	IV	
	White-eyed Vireo	20	10	IV	
	Downy Woodpecker	18	12	VI	
	Red-bellied Woodpecker	18	9	VI	
	Blue Jay	17	11	VI	
	Yellow-breasted Chat	17	10	VI	
	Eastern Towhee	17	10	IV	
	Mourning Dove	14	10	III	
	Maritime forest	Prairie Warbler	25	13	III
Bicknell's Thrush		25	-	III	
Chuck-will's-widow		24	13	II	
Blue-winged Warbler		24	-	III	
Bay-breasted Warbler		24	-	III	
Orchard Oriole		23	14	III	
Black-throated Blue Warbler		23	-	III	
Northern Bobwhite		22	12	III	
Yellow-billed Cuckoo		22	13	III	
Veery		22	-	III	
Palm Warbler		22	-	VI	
Canada Warbler		22	-	VI	
Eastern Wood-Pewee		21	12	VI	
Black-billed Cuckoo		21	-	III	
Least Flycatcher		21	-	III	
Chestnut-sided Warbler		21	-	III	
Black-throated Green Warbler		21	-	III	
Blackpoll Warbler		21	-	III	
Common Ground-Dove		20	12	IV	
Carolina Chickadee		20	11	VI	
Summer Tanager		19	10	VI	
Downy Woodpecker		18	12	VI	
Red-bellied Woodpecker		18	9	VI	
Fish Crow	18	9	VI		

Habitat	Species	Total PIF score	Habitat score	Overall score	Habitat suitability
Emergent Wetlands	Blue Jay	17	11	VI	
	Yellow-breasted Chat	17	10	VI	
	Eastern Towhee	17	10	IV	
	Nelson's Sharp-tailed Sparrow	29	-	II, V	
	Salt Marsh Sharp-tailed Sparrow	28	-	II, V	
	Swallow-tailed Kite	27	12	II, V	
	Yellow Rail	26	-	III, V	
	Seaside Sparrow	26	11	III, V	
	Reddish Egret	25	10	III	
	LeConte's Sparrow	23	-	III	
	American Black Duck	23	-	III	
	Redhead	23	-	III	
	Sedge Wren	22	-	VI	
	Clapper Rail	21	10	IV	
	American Bittern	21	12	IV	
King Rail	21	10	IV		
Canvasback	21	-	III		
Beaches and Dunes	Piping Plover	28	-	II	
	Snowy Plover	27	13	II	
	Red Knot	24	-	III	
	Stilt Sandpiper	24	-	VI	
	Buff-breasted Sandpiper	24	-	III	
	Wilson's Plover	24	13	II	
	Marbled Godwit	23	-	III	
	American Oystercatcher	22	11	IV	
	Willet	22	13	IV	
	Brown Pelican	22	9	VI	
	Short-billed Dowitcher	22	-	III	
	Black Tern	22	-	VI	
	Semipalmated Sandpiper	21	-	IV	
	Least Tern	20	13	II	
	Sandwich Tern	20	11	IV	
	Black Skimmer	20	11	IV	
	Brown Pelican	20	10	IV	
	Royal Tern	20	10	IV	
	Sanderling	20	-	VI	
	Dunlin	20	-	VI	
Gull-billed Tern	18	9	IV		

1 = Overall scores refer to the following:

I = Crisis recovery necessary

II = Immediate management and/or policy action necessary range-wide

III = Active, integrated management is needed to reverse, stabilize, or increase populations

IV = Long-term planning and habitat responsibility are needed, in association with monitoring

V = Research is necessary to further clarify population status or level of threat to species or

habitat

VI = Monitor population trends and develop habitat management only as population levels dictate.

APPENDIX C

Florida Fish and 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

Scientific Name	Common Name(s)	Designated Status	
		GFC	FWS
<u>Birds</u>			
<i>Ajaia ajaja</i>	Roseate spoonbill	SSC	
<i>Ammodramus maritimus juncicolus</i>	Wakulla seaside sparrow	SSC	
<i>Ammodramus maritimus mirabilis</i>	Cape Sable seaside sparrow	E	E
<i>Ammodramus maritimus peninsulae</i>	Scott's seaside sparrow	SSC	

		Designated Status	
Scientific Name	Common Name(s)	GFC	FWS
<i>Ammodramus savannarum floridanus</i>	Florida grasshopper sparrow	E	
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	T	T
<i>Aramus guarana</i>	Limpkin	SSC	
<i>Campephilus principalis</i>	Ivory-billed woodpecker	E	E
<i>Charadrius alexandrinus tenuirostris</i>	Southeastern snowy plover	T	
<i>Charadrius melodus</i>	Piping plover	T	T
<i>Cistothorus palustris griseus</i>	Worthington's marsh wren	SSC	
<i>Cistothorus palustris marianae</i>	Marian's marsh wren	SSC	
<i>Columba leucocephala</i>	White-crowned pigeon	T	
<i>Dendroica kirtlandii</i>	Kirtland's warbler	E	E
<i>Egretta caerulea</i>	Little blue heron	SSC	
<i>Egretta rufescens</i>	Reddish egret	SSC	
<i>Egretta thula</i>	Snowy egret	SSC	
<i>Egretta tricolor</i>	Tricolored (=Louisiana) heron	SSC	
<i>Eudocimus albus</i>	White ibis	SSC	
<i>Falco peregrinus tundrius</i>	Arctic peregrine falcon	E	
<i>Falco sparverius paulus</i>	Southeastern American kestrel	T	
<i>Grus americana</i>	Whooping crane	SSC	T(E/P)
<i>Grus canadensis pratensis</i>	Florida sandhill crane	T	

		Designated Status	
Scientific Name	Common Name(s)	GFC	FWS
<i>Haematopus palliatus</i>	American oystercatcher	SSC	
<i>Haliaeetus leucocephalus</i>	Bald eagle	T	T
<i>Mycteria americana</i>	Wood stork	E	E
<i>Pandion haliaetus</i>	Osprey	SSC*	
<i>Pelecanus occidentalis</i>	Brown pelican	SSC	
<i>Picoides borealis</i>	Red-cockaded woodpecker	T	E
<i>Polyborus plancus audubonii</i>	Audubon's crested caracara	T	T
<i>Rostrhamus sociabilis</i>	Snail kite	E	E
<i>Rynchops niger</i>	Black skimmer	SSC	
<i>Speotyto cunicularia</i>	Burrowing owl	SSC	
<i>Sterna antillarum</i>	Least tern	T	
<i>Sterna dougallii</i>	Roseate tern	T	T
<i>Vermivora bachmanii</i>	Bachman's warbler	E	E
*Applicable in Monroe County only			

APPENDIX D

ENDANGERED SPECIES OF MISSISSIPPI

MISSISSIPPI NATURAL HERITAGE PROGRAM

- 2003 -

SPECIES NAME	COMMON NAME	GLOBAL RANK	STATE RANK	FEDERAL STATUS
AVES				
CAMPEPHILUS PRINCIPALIS	IVORY-BILLED WOODPECKER	GH	SX	LE
CHARADRIUS ALEXANDRINUS TENUIROSTRIS	SOUTHEASTERN SNOWY PLOVER	G4T3Q	S2B,SZN	
CHARADRIUS MELODUS	PIPING PLOVER	G3	SZN	(LE,LT)
FALCO PEREGRINUS	PEREGRINE FALCON	G4	SZN	(PS:LE)
GRUS CANADENSIS PULLA	MISSISSIPPI SANDHILL CRANE	G5T1	S1	LE
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	G4	S1B,S2N	(PS:LT,PDL)
MYCTERIA AMERICANA	WOOD STORK	G4	S1N	(PS:LE)
PELECANUS OCCIDENTALIS	BROWN PELICAN	G4	S1N	(PS:LE)
PICOIDES BOREALIS	RED-COCKADED WOODPECKER	G3	S1	LE
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	G4T2Q	S3?B	(PS:LE)
THRYOMANES BEWICKII	BEWICK'S WREN	G5	S2S3B,SZN	
VERMIVORA BACHMANII	BACHMAN'S WARBLER	GH	SXB	LE

APPENDIX E

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