The South Atlantic Migratory Bird Initiative Implementation Plan

An Integrated Approach to Conservation of "All Birds Across All Habitats"

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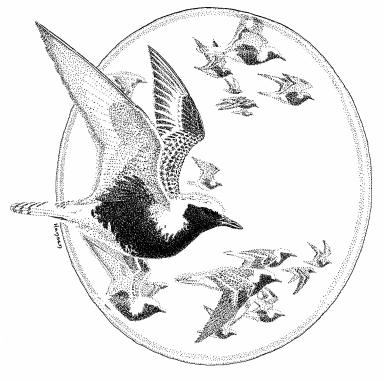

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The following document, "The South Atlantic Migratory Bird Initiative Implementation Plan – An Integrated Approach to Conservation of All Birds Across All Habitats", is fully endorsed and supported by the Management Board of the Atlantic Coast Joint Venture. This Plan represents one of the initial efforts in North America to integrate the objectives of existing and emerging bird conservation plans under the North American Bird Conservation Initiative into a single plan that land managers, biologists, administrators, and private landowners can use to achieve common goals and objectives across a regional landscape.

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EXECUTIVE SUMMARY

The South Atlantic Migratory Bird Initiative (SAMBI) is a vision and process of integrated bird conservation planning and implementation of the Management Board of the Atlantic Coast Joint Venture (ACJV). This vision and process began in 1999 when the North American Bird Conservation Initiative (NABCI) was emerging as a framework for integrated bird conservation planning in North America. SAMBI is a partnership of traditional joint venture partners and new partners (federal, state, non-governmental, and private) that are dedicated to delivering conservation of "all birds across all habitats" in the southeastern coastal plain of the United States. This effort was the first effort of its kind under the framework of NABCI by a waterfowl joint venture.

This Plan provides a regional scale framework for the conservation of waterfowl, shorebirds, waterbirds, landbirds, and other high priority species, such as Northern Bobwhite (*Colinus virginianus*) and American Woodcock (*Scolopax minor*). This framework utilizes existing national and regional plans of the North American Waterfowl Management Plan, U.S. Shorebird Conservation Plan, Partners In Flight, North American Waterbird Conservation Plan, and the Northern Bobwhite Conservation Initiative to build a framework for regional bird conservation. This framework seeks to integrate common goals and objectives of these national and regional plans, providing conservationists a strategy for meeting the challenge of sustaining healthy ecosystems and healthy bird populations in the midst of increasing threats along the Atlantic Coast.

The south Atlantic coastline and coastal plain is under extreme threat of commercial, industrial, and residential development. However, there is opportunity to conserve much of the habitat that remains. This plan identifies priority species, priority habitats, priority areas, and strategies to achieve the conservation of "all birds across all habitats" in the south Atlantic coastal plain. This Plan is a result of the collaboration of federal, state, non-governmental, and private interests coming together to build a cohesive strategy for bird conservation in the southeastern United States. Pelagic bird conservation is addressed, and international opportunities for bird conservation are explored. SAMBI provides a regional framework for the conservation of birds and bird habitats that has implications at multiple scales: local, state, regional, pelagic, international, and hemispheric.

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I. INTRODUCTION

A. Mission

The South Atlantic Migratory Bird Initiative (SAMBI) of the Atlantic Coast Joint Venture proposes to deliver a habitat conservation strategy for the conservation of "all birds across all habitats", consistent with and complimentary to international, national, regional, and local migratory bird planning efforts. This conservation strategy is based on a strong biological foundation and fostering partnerships at all levels of implementation (international, national, regional, local) through a strong network of conservation partners, including federal, state, non-governmental organizations, and private landowners.

B. Vision

The SAMBI proposes to integrate planning efforts between the four major migratory bird planning initiatives (North American Waterfowl Management Plan, Partners In Flight, United States Shorebird Conservation Plan, North American Waterbird Conservation Plan), and other single species bird conservation initiatives (eg. Northern Bobwhite Conservation Initiative) in the continental United States, seeking common goals and objectives for habitat conservation to sustain, maintain, and increase populations of migratory birds and resident birds which utilize the Atlantic Flyway.

C. Boundaries of the Planning Area

The planning area or boundary for the South Atlantic Migratory Bird Initiative (SAMBI) is the eastern portion of Bird Conservation Region (BCR) 27, the Southeastern Coastal Plain (Figure 1). This large and diverse area encompasses the coastal plain of Florida, Georgia, South Carolina, North Carolina, and Virginia (), the western boundary being the Fall Line that marks the transition between the coastal plain and the hilly Piedmont. The northern boundary lies in southeast Virginia and is delineated by the watershed boundary between the Chowan River Basin and the Lower James River Basin which includes the Great Dismal Swamp and Back Bay National Wildlife Refuges. The southeastern boundary is in northeastern Florida, and is a transitional zone into Peninsular Florida, where coastal plain plant communities become dominated by tropical plant communities, such as black mangrove and scrub communities. This southernmost boundary generally is just south of Fort Matanzas National Monument on the Atlantic Coast, north up the Matanzas River, westward through St. Johns County south of St. Augustine, westward through Clay County, running through the northern portion of Camp Blanding and Gold Head Branch State Park, then north of Gainesville, Florida, and then south to a point

Figure 1. Planning Area for the South Atlantic Migratory Bird Initiative (SAMBI)

approximately midway between the Lower Suwanee National Wildlife Refuge and Cedar Keys National Wildlife Refuge. The Gulf of Mexico forms the remaining segment of the southern boundary. The westernmost boundary is the western edge of the Chattahoochee-Apalachicola River Basin from the Piedmont Fall Line to Cape San Blas, which includes the western boundary of Apalachicola Bay. Portions of the southern and eastern boundaries of southeastern coastal plain are the Gulf of Mexico and Atlantic Ocean respectively, but the SAMBI planning area extends well offshore to include the entire Southeast U.S. Continental Shelf (BCR 77) and the near shore waters of the Gulf of Mexico pelagic BCR (74) (Figure 2). The waters addressed in this plan include all coastal offshore waters adjacent to the terrestrial portion of the SAMBI planning area in the Gulf of Mexico and waters of the Atlantic Ocean that extend to and beyond the Gulf Stream where high priority oceanic birds inhabit. The remainder of BCR 27 not addressed in this plan largely encompasses the East Gulf Coastal Plain physiographic area, and which will be addressed in future planning efforts (Figure 3).

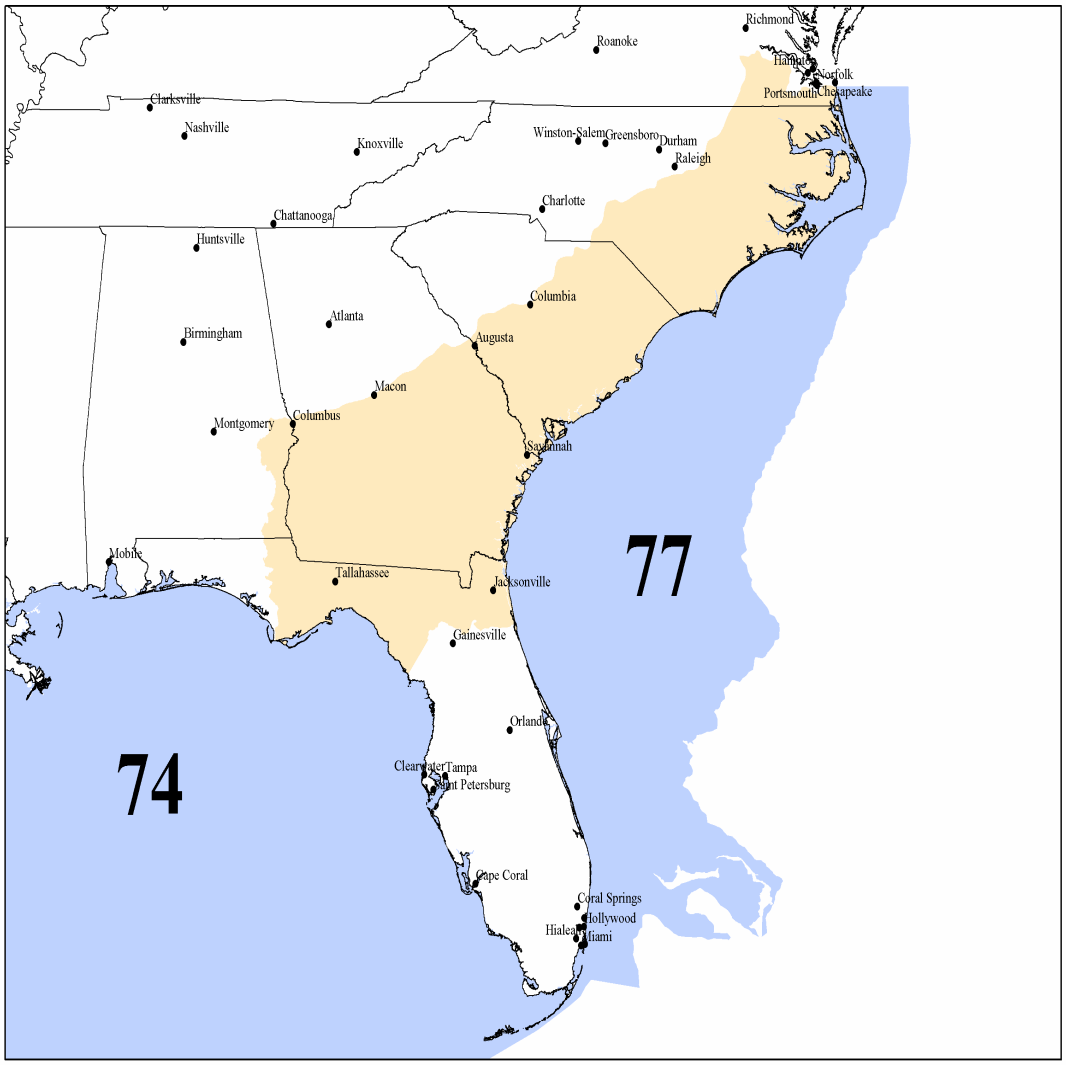


Figure 2. Pelagic Bird Conservation Regions (74 – Gulf of Mexico, 77- Southeast U.S. Continental Shelf)

D. BACKGROUND

One of the original waterfowl Joint Ventures formed under the North American Waterfowl Management Plan in 1988, the Atlantic Coast Joint Venture (ACJV) has evolved both geographically and conceptually from it's original delineated boundaries in 1988 (Fig. 4) to include the 17 Atlantic Flyway states and the Commonwealth of Puerto Rico (Fig. 5). With these expanded boundaries came expanded responsibilities for the conservation of waterfowl and other wetland associated species. During this period of ACJV growth, several other bird conservation initiatives had begun planning at various scales. These initiatives included Partners in Flight (Pashley et al. 2000), United States Shorebird Conservation Plan (Brown et al. 2001), and the North American Waterbird Conservation Plan (Kushlan et al. 2002). These initiatives have developed continental, national or regional plans that addressed species population and habitat goals.

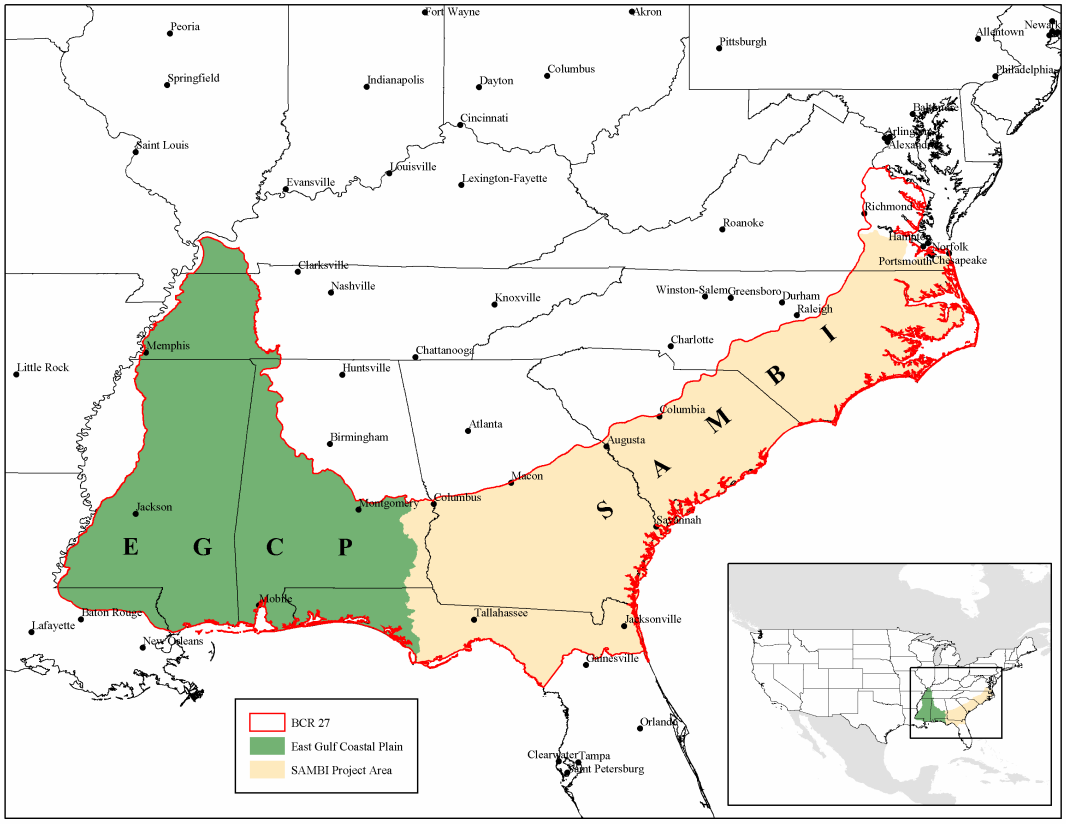


Figure 3. BCR 27 (SAMBI Planning Area and East Gulf Coastal Plain)

The North American Bird Conservation Initiative (NABCI) was established to integrate the common goals and objectives of these initiatives and create a more efficient mechanism for the delivery of bird conservation (U.S. NABCI Committee 2000). Ecological planning units known as Bird Conservation Regions (BCRs), were developed by NABCI to help planning within physiographic regions of similar habitat types and bird species composition. Also, other single species bird conservation initiatives have been or are being developed for Northern Bobwhite, Mourning Dove (*Zenaida macroura*), and American

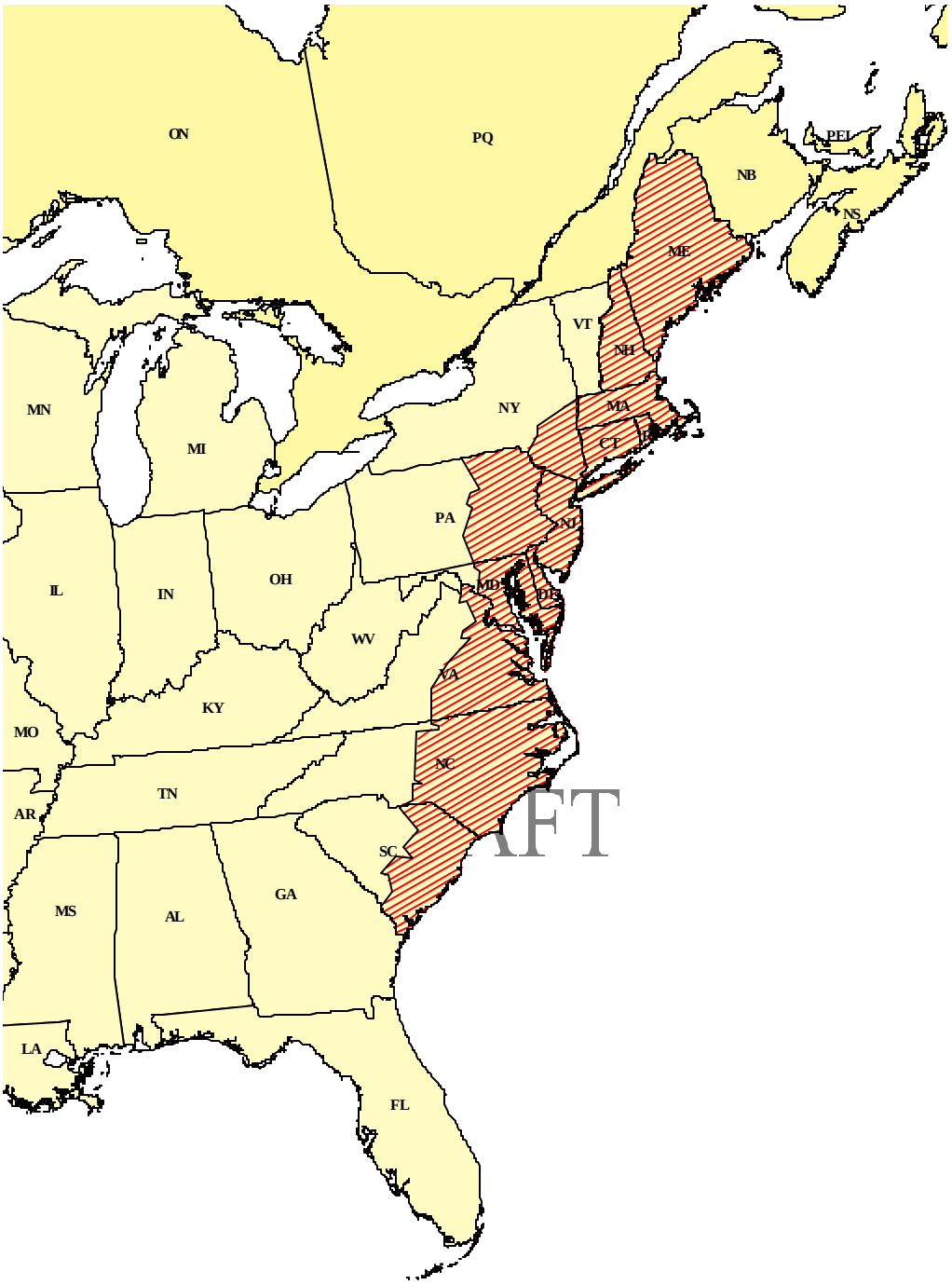


Figure 4. Original Boundary of the Atlantic Coast Joint Venture (1988)

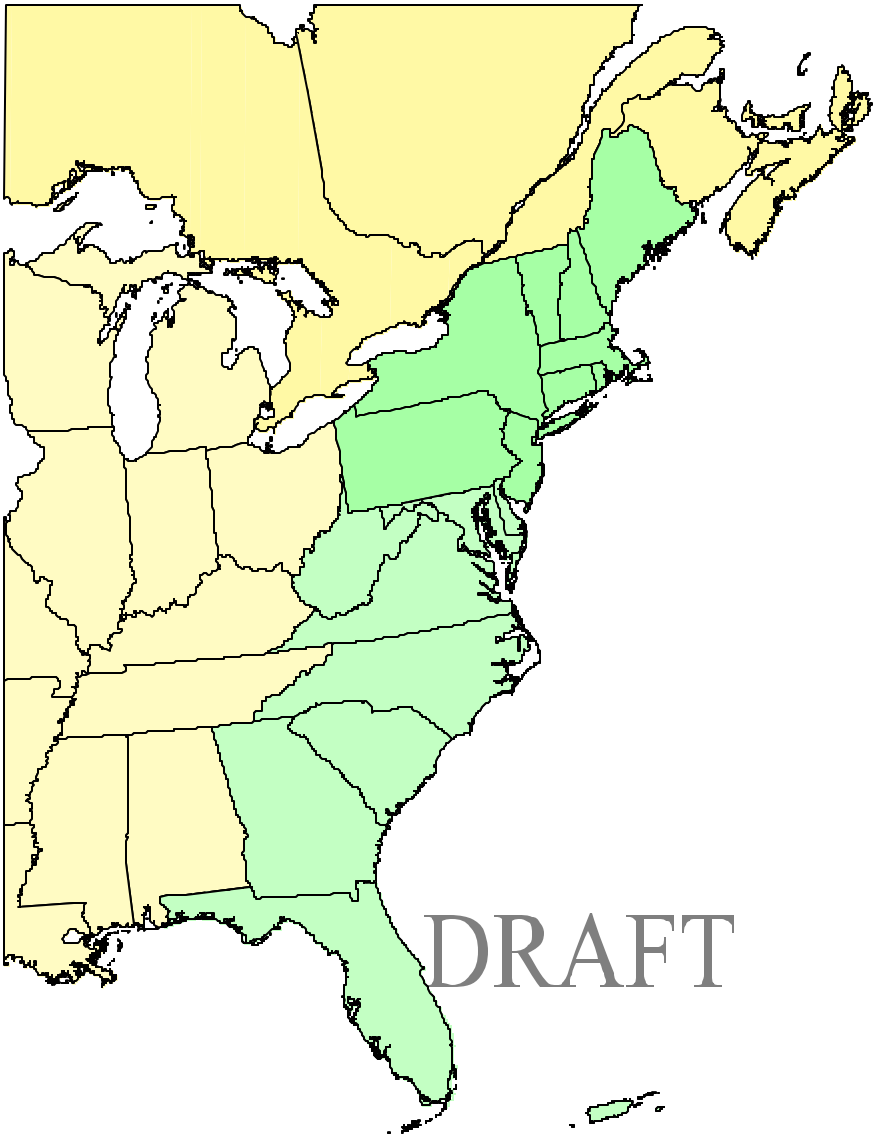


Figure 5. Area of the Atlantic Coast Joint Venture (2002)

Woodcock. Currently, only the Northern Bobwhite Conservation Initiative (Dimmick et al. 2002) is complete.

In March 1999, the Management Board of the Atlantic Coast Joint Venture unanimously adopted and embraced the framework of NABCI to deliver conservation of "all birds across all habitats". The ACJV was the first NAWMP Joint Venture to officially adopt and embrace the framework of NABCI. The first effort of this integrated bird conservation planning vision within the ACJV began in 1999 in the Southeastern Coastal Plain Bird Conservation Region (BCR 27). Two workshops were held in 1999 to begin the process of integrated bird conservation in BCR 27. A third meeting was held in February 2000.

II. APPROACH AND PLANNING PROCESS

In May 1999, members of the Management Board requested staff of the ACJV to plan and conduct an integrated bird conservation planning in the southeast, initially focusing on Georgia, South Carolina, and North Carolina. Approximately 45 land managers, biologists, scientists, administrators, and planners representing interests of five states (Florida, Georgia, South Carolina, North Carolina, Virginia), including federal, state, non-governmental, and private entities, and with expertise in waterfowl, shorebird, landbird, and waterbird conservation met in June 1999 near Garnett, South Carolina to begin the process of integrated bird planning and implementation.

The objectives of the workshop were to 1) develop population and habitat objectives for priority species 2) delineate "all bird" focus areas, 3) identify priority species and habitats 4) develop projects for implementation, and 5) develop a long term dynamic framework for integrated bird conservation planning in BCR 27. This initiative became known as the South Atlantic Migratory Bird Initiative (SAMBI). Because the ACJV administratively encompasses only a portion of BCR 27, the planning area was limited to the coastal plain of Florida, Georgia, North Carolina, South Carolina, and Virginia, although a small portion of Alamaba is ecologically included in this region, and is therefore shown on all maps of the SAMBI planning area (Fig. 1, Figure 3).

The first workshop opened with reports on the status of bird conservation planning for each of the major bird initiatives, followed by presentations on several different approaches to developing population and habitat objectives for shorebirds and waterfowl in the United States. The purpose of these presentations was to provide information about the ACJV, the status and evolution of bird conservation planning in the United States and North America, and demonstrate that a vision of integrated bird conservation could become a reality through a coordinated effort. All sessions, breakout and plenary, were conducted with a facilitator. To prepare for the first workshop, all attendees were briefed concerning information and materials needed to conduct a successful workshop. The structure of the first workshop centered on breakout groups by state, with experts in waterfowl, landbirds, shorebirds, and waterbirds, present. Other attendees with interests in a particular state were free to attend and participate in assisting each breakout group with its objectives. Attendees with interests in all states, both biologically and administratively, attended multiple breakout sessions, providing input for each group's assigned tasks. These groups, known as State Working Groups (SWG), became the fundamental planning and implementation body for SAMBI. Technical personnel from each state were collectively called the BCR Technical Committee. In the first workshop, the primary objectives of the breakout groups were to:

1) delineate "all bird" focus areas,
2) develop strategic population and habitat objectives for each major bird group or at least representative or high priority species within each bird group,
3) identify preliminary projects for implementation, and
4) develop an outline for a long term framework for bird conservation in the southeastern United States.

During this process, SWGs were asked to identify information gaps and needs relative to developing habitat and population objectives for BCR 27. Additionally, the entire group was asked to express their hopes and concerns about the meeting's purpose, and their vision for what this effort might be if successful. After the breakout and general sessions

were complete, an open discussion was held on the process undertaken at this meeting, noting comments on how the process could be improved. In closing the first workshop, action items and future activities were identified by the larger group.

The second workshop was held on November 4-5, 1999, in Greensboro, North Carolina. The structure of the second workshop was different from the first. There were no breakout sessions, meeting attendance was reduced, and attendees were comprised mostly of technical personnel. The primary focus of the second meeting was to report and present to the group the completion of action items from the first workshop, prioritize habitats and species, prioritize habitat conservation needs, prioritize projects by state, develop research needs, and begin developing a project to be submitted to the North American Wetlands Conservation Act (NAWCA) for funding. Action items for the group and each SWG were generated at the end of the workshop.

A third meeting was held on January 19, 2000, in St. Petersburg, Florida. The primary purpose of this meeting was solely devoted to developing a multi-state, multi-project proposal to be submitted for funding through NAWCA using a new integrated framework of bird conservation planning in the southeastern United States.

A. State Working Groups

Because it is difficult for conservationists from all five states to meet on a regular basis, it became logical to develop State Workings Groups to coordinate planning and implementation at the state level, and to coordinate activities between the five states. State Working Groups have local knowledge of resources, existing partnerships, threats to the landscape, and strategies to achieve conservation at the state level, and thus, became the basic functional unit of SAMBI to plan and implement the conservation of "all birds across all habitats". State Working Groups can develop and network more extensive partnerships than the large group, making the delivery of bird habitat conservation more efficient at the state level. Each SWG consists of federal, state, NGO, and private interests with expertise in knowledge of the major bird groups, and with expertise in planning, implementation, and developing partnerships. State Working Groups continue to meet on their own to develop projects, refine biological planning, and develop partnerships. State Working Groups have been critical to the success of SAMBI.

B. Setting Population and Habitat Objectives

Population and/or habitat objectives were derived for many of the priority species of each major bird initiative based upon existing national and regional plans (Pashley and others 2000, Hunter and others 2001, Brown and others 2001, Hunter and others 2002, Kushlan and others 2002, Kushlan 2002), bird initiative workshops, and local/regional knowledge and expertise. These regional plans are quite detailed in objectives for both population and habitat for many of the high priority species. Because the SAMBI planning area is essentially the same as the planning area or area of geographic importance for priority species in these plans, objectives outlined in these plans are directly applicable to SAMBI.

Similar objectives for waterfowl are now being developed in a regional plan, and current objectives for waterfowl within the ACJV are area based and categorized by state and

focus area (U.S. Fish and Wildlife Service 1988b). Factors influencing existing waterfowl objectives have significantly changed since 1988, warranting a revision of the current ACJV Implementation Plan and its objectives. For SAMBI, the Noffsinger method (Noffsinger 1999, unpbl.) was used to calculate waterfowl objectives by state (Balkcom pers. comm., Harrigal pers. comm., Luszcz pers. comm.). The Noffsinger method is a modified calculation of the bioenergetics model that was used in the Mississippi Alluvial Plain to calculate both waterfowl and shorebird objectives (Loesch and others 2000).

The SAMBI BCR Technical Committee also developed habitat and/or population objectives for species they felt important but that were not specifically addressed in regional plans. Additionally, they adjusted existing population and habitat objectives for some priority species to better address local conservation needs. Finally, State Working Groups of the BCR Technical Committee stepped down regional objectives to state objectives for certain species. For example, the goal for Swallow-Tailed Kite in the Partners In Flight Bird Conservation Plan for the South Atlantic Coastal Plain (SACP) is to provide eight patches of at least 40,500 ha of bottomland hardwood forests. However, this plan does not indicate where in the SACP these large forest patches should be distributed. State Working Groups evaluated the availability and potential of such habitat within their respective states and assigned a portion of these eight patches to individual states. As an example, Georgia and South Carolina allocated, respectively, two and three patches of the recommended eight patches to their states in specific areas, thus targeting these areas for conservation. Additionally, by allocating these patches to their states, the Swallow-tailed Kite goal also incorporated goals for Wayne's Black-throated Green Warbler and Swainson's Warbler where the breeding ranges of these species overlap.

C. Delineation of Focus Areas

A primary objective of SAMBI was to delineate focus areas, areas in which conservation actions are implemented for high priority species and habitats. Focus areas are biologically based, and conservation actions are dictated by both biological foundation and opportunity. It is important that focus areas be large enough to provide all the necessary seasonal requirements for a wide variety of species. At the same time, small, distinct and sometimes disjunct areas that are equally important to high priority species should be included. Essentially, focus areas are important to the life history of a wide variety of high priority birds where financial and conservation resources can be expended to have positive effects on these bird populations (Hayes and others 2002).

During the first workshop, SAMBI participants noted that focus areas should link important habitat areas, guard against fragmentation, and include upland areas, and link existing protected areas Public lands, other protected areas, and areas of high avian resource value were considered to serve as anchors from which to base delineation of focus areas (Figure 6). Existing waterfowl focus areas were used as examples or a starting point to delineate "all bird" focus areas. Waterfowl focus areas had already been described (U.S. Fish and Wildlife Service 1988b), and were known to provide critical habitat for waterfowl, shorebirds, and waterbirds. Additionally, SAMBI participants agreed that focus areas should be places where all disciplines could work together, ignoring geopolitical boundaries.

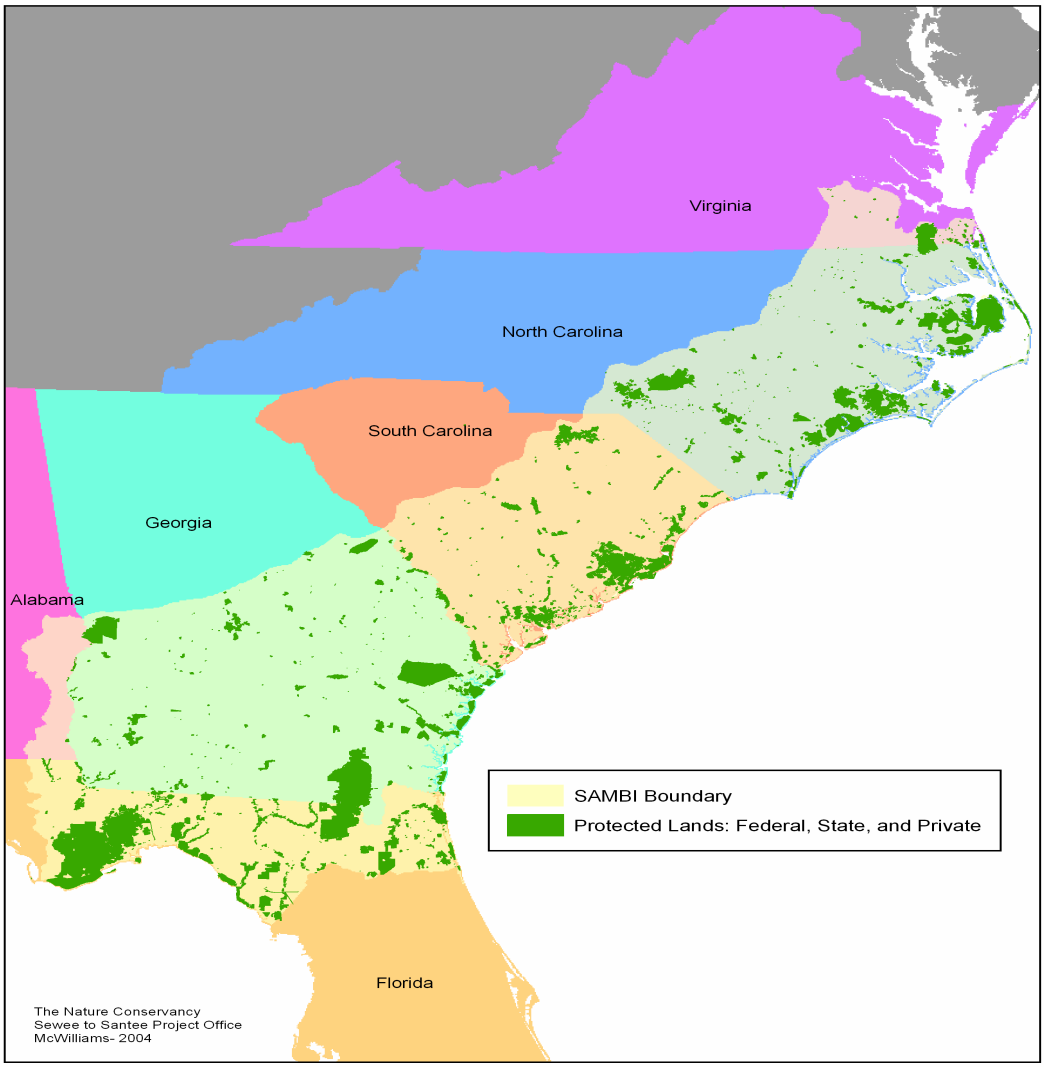


Figure 6. Map of Protected Lands (Federal, State and Private) within the SAMBI Region (McWilliams, 2004)

State Working Groups (SWGs) were asked to delineate distinct focus areas for landbirds, shorebirds, waterbirds, waterfowl, or any other bird group (i.e. Northern Bobwhite/early successional species) in which to focus their conservation efforts. We used 1:250,000 topographic maps to delineate distinct focus areas for each bird group (Figures 8-13). All five delineated these focus areas (Figures 8-13). Once these areas were delineated for each bird group, the areas could be superimposed, displaying the overlap of focus areas (Figures 9e, 10f, 11e, 12f, and 13e). This layering of the various bird focus areas for each State can be displayed to represent one large "all bird" focus area for each state, and each of the five states can be combined to display one large "all bird" SAMBI focus Area. Additionally, focus areas for each bird group for the entire SAMBI area can be displayed individually (Figure 19a-e).

This effort allowed the participants to visualize differences in amounts and types of habitats across their own jurisdiction as well as across the entire BCR. Some states, such as North Carolina, worked on distinct focus areas for Northern Bobwhite and other early

successional species. In North Carolina, a new program called CURE (Cooperative Upland Habitat Restoration and Enhancement) has delineated landscape scale focus areas in which to direct efforts for the conservation of high priority early successional species (Figure 9e). Additionally, northern bobwhite focus areas have been identified in Georgia (Figure 11e), and similar areas are being developed in South Carolina (Dukes pers. comm.).

Focus areas for each bird group, whether at the State or regional level (SAMBI), are important to each group for conservation projects, contributing to conservation of priority bird species at the local, regional, flyway, and continental level. Additionally, SAMBI partners recognize that these focus areas are important for pursuing single bird group projects, such as for waterfowl or shorebirds, or even projects focused on a single high priority species. Thus, projects in focus areas need not necessarily contribute to multiple bird group conservation, but contribute to regional biodiversity. The break-down of sites allows groups that function on a smaller scale, such as many non-profits and state agencies, to contribute to the conservation action already being taken on the larger, national scale by federal agencies.

D. Determining Priority Species and Habitats

Priority species for landbirds, shorebirds, and waterbirds have been identified in each major bird initiative's national and/or regional plans; Partners In Flight (Pashley and others 2000, Hunter and others 2001), United States Shorebird Conservation Plan (Brown and others 2001, Hunter and others 2002), and the North American Waterbird Conservation Plan (Kushlan and others 2002). The prioritization process for determining priority species for each bird group is outlined in each of the individual national and regional bird conservation plans (ADD in Links for the bird plans). Priority waterfowl species were selected based upon annual population analyses at the continental level, regional knowledge of waterfowl populations and habitat, local knowledge of waterfowl issues, and North American Waterfowl Management Plan priorities (U.S. Fish and Wildlife Service 1998a, U.S. Fish and Wildlife Service 2003). The BCR Technical Committee concurred with the list of priority species outlined in the various bird plans, adjusting priorities where applicable, and designating species of special management concern for the SAMBI planning area (Table 1). Priority species outlined for SAMBI generally occupied priority habitats, therefore encompassing the conservation needs of suites of species. Additionally, regional responsibilities and areas of importance for some species were identified. For example, eastern North Carolina was identified as having both regional responsibility and supporting a highly significant wintering area for Tundra Swan for the entire Atlantic Flyway. Finally, species that were not identified in any regional bird conservation plan, yet identified by the SWG, were added as high priority species (see States Section).

Table 1. Priority Species List for the South Atlantic Migratory Bird Initiative

Work Group	**Species**		
Landbirds	Painted Bunting *Passerina ciris*	Henslow's Sparrow *Ammodramus henslowii*	Cerulean Warbler *Dendroica cerulea*
	Black-throated Green	Northern Bobwhite	Prothonotary Warbler

	Warbler *Dendroica virens*	*Colinus virginianus*	*Protonotaria citrea*
	Bachman's Sparrow *Aimophila aestivalis*	Prairie Warbler *Dendroica discolor*	Chuck-will's Widow *Caprimulgus carolinensis*
	Swallow-tailed Kite *Elanoides forficatus*	Red-cockaded Woodpecker *Picoides borealis*	Whipporwill *Caprimulgus vociferus*
	American Kestrel *Falco sparverius*	Red-headed Woodpecker *Melanerpes erythrocephalus*	Louisiana Waterthrush *Seiurus motacilla*
	Brown-headed Nuthatch *Sitta pusilla*	Wood Thrush *Hylocichla mustelina*	Saltmarsh Sharp-tailed Sparrow *Ammodramus caudacutus*
	Swainson's Warbler *Limnothlypis swainsonii*	Northern Parula *Parula americana*	Nelson's Sharp-tailed Sparrow *Ammodramus nelsoni*
	Common Ground Dove *Columbina passerina*	Hooded Warbler *Geothlypis nelsoni*	Leconte's Sparrow *Ammodramus leconteii*
	Common Barn Owl *Tyto alba*	Worm-eating Warbler *Helmitheros vermivorus*	Yellow-throated Warbler *Dendroica dominica*
	Loggerhead Shrike *Lanius ludovicianus*	Yellow-billed Cuckoo *Coccyzus americanus*	Seaside Sparrow *Ammodramus maritimus*
Waterbirds	Black Rail *Laterallus jamaicensis*	Sandwich Tern *Sterna sandvicensis*	Least Bittern *Ixobrychus exilis*
	Yellow Rail *Coturnicops noveboracensis*	Wood Stork *Mycteria americana*	Limpkin *Aramus guarauna*
	Brown Pelican *Pelecanus occidentalis*	King Rail *Rallus elegans*	Black Tern *Chlidonias niger*
	Black Skimmer *Rynchops niger*	Double-crested Cormorant*** *Phalacrocorax auritus*	Royal Tern *Sterna maxima*
	Gull-billed Tern *Sterna nilotica*	Clapper Rail *Rallus longirostris*	Common Tern *Sterna hirundo*
	Least Tern *Sterna antillarum*	American Bittern *Botaurus lentiginosus*	Little Blue Heron *Egretta caerulea*
Shorebirds	Buff-breasted Sandpiper *Tryngites subruficollis*	Marbled Godwit *Limosa fedoa*	Willet *Catoptrophorus semipalmatus*
	American Woodcock *Scolopax minor*	Stilt Sandpiper *Calidris himantopus*	Purple Sandpiper *Calidris maritima*
	Red Knot *Calidris canutus*	Spotted Sandpiper *Actitis macularia*	Whimbrel *Numenius phaeopus*
	Piping Plover *Charadrius melodus*	Semi-palmated Sandpiper *Calidris pusilla*	Least Sandpiper *Calidris minutilla*
	American Oystercatcher *Haematopus palliatus*	Short-billed Dowitcher *Limnodromus griseus*	Ruddy Turnstone *Arenaria interpres*
	Wilson's Plover *Charadrius wilsonia*	Western Sandpiper *Calidris mauri*	Dunlin *Calidris alpina*
	Black-bellied Plover *Pluvialis squatarola*	American Avocet *Recurvirostra americana*	Sanderling *Calidris alba*
Pelagic	Black-capped Petrel *Pterodroma hasitata*	Cory's Shearwater *Calonectris diomedea*	Sooty Tern *Sterna fuscata*
	Bermuda Petrel *Pterodrama cahow*	Greater Shearwater *Puffinus gravis*	White-tailed Tropicbird *Phaethon lepturus*

	Roseate Tern *Sterna dougallii*	Long-tailed Jeager *Stercorarius longicaudus*	Manx Shearwater *Puffinus puffinus*
	Audubon's Shearwater *Puffinus lherminieri*	Common Loon *Gavia immer*	Red-throated Loon *Gavia stellata*
	Bridled Tern *Sterna anaethetus*	Northern Gannet *Morus bassanus*	
Waterfowl	Black Duck *Anas rubripes*	Greater Scaup *Aythya marila*	White-winged Scoter *Melanitta fusca*
	Wood Duck *Aix sponsa*	Mallard *Anas platyrhynchos*	Canada Goose* *Branta canadensis*
	Tundra Swan *Cygnus columbianus*	Redhead *Aythya americana*	Northern Pintail *Anas acuta*
	Canvasback *Aythya valisineria*	Ring-necked Duck *Aythya collaris*	Blue-winged Teal *Anas discors*
	Lesser Scaup *Aythya affinis*	Surf Scoter *Melanitta perspicillata*	Canada Goose** *Branta canadensis*
	Black Scoter *Melanitta nigra*		

*Atlantic and Southern James Bay Canada Goose

**introduced established resident populations of Canada goose

***overabunant species in many areas

Habitats for each of the bird groups also are clearly identified in regional bird conservation plans based on the list of priority species. To describe these habitats in a concise and meaningful manner, they were lumped and placed into categories (Table 2). SWGs often had additional habitats of local importance they wished to have included in the list of priority habitats (see States Section). Priority habitats were placed into eight broad categories (Table 3). Essentially all of the priority species listed in the plan are found within one or more of the eight priority habitats. Additionally, SWGs identified priority areas for conservation within their jurisdiction See States Section).

TABLE 2. Habitat-species suites in the eastern portion of the Southeastern Coastal Plain Bird Conservation Region (BCR 27)

Habitat	Priority Species**	Description
1) Grasslands and Associated Habitats	Henslow's Sparrow, Loggerhead Shrike, Northern Bobwhite, LeConte's Sparrow, Buff-bellied Sandpiper, Sandhill Crane	Forest-dominated landscapes with pitcher plant bogs, prairies, sedgelands, savannas, barrens, glades, and sod farms
2) Managed and Palustrine Emergent Wetlands and Mudflats	King Rail, Yellow Rail, Black Rail, Least Bittern, American Bittern, Buff-bellied Sandpiper, Stilt Sandpiper, Whimbrel, Northern Pintail, Black Duck, Ring-necked Duck, Wood Stork	Freshwater marshes and mudflats - freshwater emergent tidal marshes, managed impoundments, dredge spoil, exposed mudflats (managed and shallow water)
3) Early-Successional and Shrub-Scrub	Bachman's Sparrow, Henslow's Sparrow, Loggerhead Shrike, Prairie Warbler, Northern Bobwhite, American Woodcock, Field Sparrow	"Old-field", hedgerows, fire maintained plant communities under mature pine forests, bogs, and remnant cedar (Juniperus spp.) glades
4) Forested Wetlands (Alluvial)	Swallow-tailed Kite, Prothonotary Warbler, Black-throated Green Warbler, Cerulean Warbler, Swainson's Warbler, Yellow-throated Warbler, Wood Duck, Mallard	Bottomland hardwood forests, alluvial forests, and swamp forests, alluvial floodplain, major forest types are cottonwood (Populus spp.), oak (Quercus

		spp., oak/hickory (Carya spp.), cypress (Taxodium spp.)/tupelo (Nyssa spp., and sweetbay (Magnolia spp./redbay (Persea spp.)
5) Forested Wetlands (Non-Alluvial): Pocosins, Carolina Bays, Other Non-Alluvial	Black-throated Green Warbler, Swainson's Warbler, Prothonotary Warbler, Worm-eating Warbler, Red-cockaded Woodpecker, Brown-headed Nuthatch, Red-headed Woodpecker, Chuck-will's-widow, Wood Duck, Yellow-throated Warbler, Northern Parula	Pocosins, Carolina Bays, and other non-alluvial wetlands, pond pine dominated pocosins, palmetto (Sabal spp.), laurel oak (Quercus laurifolia), loblolly pine (Pinus taeda)
6) Maritime Communities: *Maritime Forest/ Shrub-Scrub*	Painted Bunting, Prairie Warbler, Common Ground Dove, Northern Parula, Yellow-throated Warbler, Bicknell's Thrush, Kirtland's Warbler, Cape May Warbler, Black-throated Blue Warbler, Connecticut Warbler	Live oak (Quercus virginianus), palmetto (Sabal palmetto), loblolly pine (Pinus taeda), coastal hammocks with numerous understory species, shrub-scrub thickets of wax myrtle (Myrica cerifera) and yaupon holly (Ilex vomitoria)
7) Maritime Communities: *Estuarine emergent wetlands*	Nelson's Sharp-tailed Sparrow, Salt Marsh Sharp-tailed Sparrow, Seaside Sparrow, Black Rail, Yellow Rail, Black Duck, Wood Stork, Blue-winged Teal	Estuaries - tidal flats, emergent wetlands, and border maritime woodlands
8) Maritime Communities: *Beaches and Dunes*	Red Knot, Piping Plover, Snowy Plover, Wilson's Plover, Least Tern, Royal Tern, Black Skimmer, American Oystercatcher, Reddish Egret	Beaches,dunes, overwash areas , oyster bars, rock jetties, dredge spoil areas
9) Maritime Communities: *Open Ocean (Gulf Stream)*	Black-capped Petrel, Bermuda Petrel, Audubon's Shearwater, White-tailed Tropicbird, Roseate Tern, Black Scoter	Open ocean waters near the Gulf Stream paralleling the South Atlantic Coastal Plain
10) Longleaf / Slash Flatwoods and Savannas and Longleaf Sandhills	Red-cockaded Woodpecker, Northern Bobwhite, Loggerhead Shrike, Prairie Warbler, Bachman's Sparrow, Henslow's Sparrow, Brown-headed Nuthatch, American Kestrel	Longleaf pine (*Pinus palustris)* flatwoods and savannas, and longleaf sandhills, system is maintained by fire
11) Mature Loblolly	Field Sparrow, Brown-headed Nuthatch, Prairie Warbler, Bachman's Sparrow, Northern Bobwhite, Red-cockaded Woodpecker,	Mature lobolly, shortleaf (*Pinus echinata*), and slash pine (*Pinus elliottii) forest; much of longleaf historic longleaf pine and shortleaf pine have been replaced with loblolly and slah pine stands*
12) Short-Rotation "Plantation" Pine	Northern Bobwhite, Bachman's Sparrow, Field Sparrow, Prairie Warbler, Henslow's Sparrow, Wood thrush	Primarily loblolly and slash pine
13) Oak-Hickory/Tulip Poplar (*Liriodendron tulipifera)/* Pine Forests	Priority species here are the same as for longleaf sandhills	Turkey oak (*Quercus laevis)* and scrub oak (*Quercus spp.*) species in the sandhills, and southern mixed mesophytic forests along bluffs and ravines
14) Riparian/ Mixed Mesic Hardwoods (Southern Mixed, Hammocks)	Swainson's Warbler, Kentucky Warbler, Acadian Flycatcher, Louisiana Waterthrush, Cerulean Warbler	Riparian-streamside areas, bottomlands and all palustrine wetlands on coastal plains and prairies, upland riparian areas; Hammocks - narrow bands of vegetation confined to slopes between upland sand/clayhill pinelands and bottomlands
15) Urban/Suburban Backyards, Rural Woodlots	Important for transient nearctic, neotropical species	Riparian areas, mature woods, other non-forested areas
16) Other Inland Habitats	Least Tern, American Avocet, Blue-winged Teal, Wood Duck, Wood Stork, Painted	Rooftops, dredges spoil areas, flooded croplands, riverbars, lakeshores, pasture

	Bunting, Stilt Sandpiper, Semipalmated Sandpiper	and other agricultural lands

**Scientific names provided in Table 1

In addition to the major bird conservation initiatives, several single species initiatives have also been developed or are being created. The Northern Bobwhite Conservation Initiative (*Colinus virginianus*; Dimmick and others 2002), began as the first initiative to focus on the conservation of one priority species. Several other initiatives have just begun for the mourning dove (*Zenaida macroura*) and American woodcock (*Philohela minor*).

TABLE 3. Priority Habitats for the South Atlantic Migratory Bird Initiative (SAMBI)

Habitat	**Priority Species****	**Description**
1) Grasslands and Associated Habitats	Henslow's sparrow, loggerhead shrike, northern bobwhite, LeConte's sparrow, buff-bellied sandpiper, sandhill crane	Forest-dominated landscapes with pitcher plant bogs, prairies, sedgelands, savannas, barrens, glades, and sod farms
2) Managed and Palustrine Emergent Wetlands and Mud-flats	King rail, yellow rail, black rail, least bittern, American bittern, buff-bellied sandpiper, stilt sandpiper, whimbrel, northern pintail, black duck, ring-necked duck, wood stork	Freshwater marshes and mudflats - freshwater emergent tidal marshes, managed impoundments, dredge spoil, exposed mudflats (managed and shallow water)
3) Early-Successional Shrub-Scrub	Bachman's sparrow, Henslow's sparrow, loggerhead shrike, prairie warbler, northern bobwhite, American woodcock, field sparrow	"Old-field", hedgerows, fire maintained plant communities under mature pine forests, bogs, and remnant cedar (Juniperus spp.) glades
4) Forested Wetlands		
Alluvial	Swallow-tailed kite, prothonotary warbler, black-throated green warbler, cerulean warbler, Swainson's warbler, yellow-throated warbler, wood duck, mallard	Bottomland hardwood forests, alluvial forests, and swamp forests, alluvial floodplain, major forest types are cottonwood (Populus spp.), oak (Quercus spp., oak/hickory (Carya spp.), cypress (Taxodium spp.)/tupelo (Nyssa spp., and sweetbay (Magnolia spp./redbay (Persea spp.)
Non-Alluvial: Pocosins, Carolina Bays, Other	Black-throated green warbler, Swainson's warbler, prothonotary warbler, worm-eating warbler, red-cockaded woodpecker, brown-headed nuthatch, red-headed woodpecker, chuck-will's-widow, wood duck, yellow-throated warbler, northern parula	Pocosins, Carolina Bays, and other non-alluvial wetlands, pond pine dominated pocosins, palmetto (Sabal spp.), laurel oak (Quercus laurifolia), loblolly pine (Pinus taeda)
5) Maritime Communities		
Maritime Forest/ Shrub-Scrub	Painted Bunting, Prairie Warbler, Common Ground Dove, Northern Parula, Yellow-throated Warbler, Bicknell's Thrush, Kirtland's Warbler, Cape May Warbler, Black-throated Blue Warbler, Connecticut Warbler	Live oak (*Quercus virginianus*), palmetto (*Sabal palmetto*), loblolly pine (Pinus taeda), coastal hammocks with numerous understory species, shrub-scrub thickets of wax myrtle (Myrica cerifera) and yaupon holly (Ilex vomitoria)
Estuarine Emergent Wetlands	Nelson's sharp-tailed sparrow, salt marsh sharp-tailed sparrow, seaside	Estuaries - tidal flats, emergent wetlands, and border maritime

	sparrow, black rail, yellow rail, black duck, wood stork, blue-winged teal	woodlands
Beaches and Dunes	Red knot, piping plover, snowy plover, Wilson's plover, least tern, royal tern, black skimmer, American oystercatcher, reddish egret	Beaches,dunes, overwash areas, oyster bars, rock jetties, dredge spoil areas
Open Ocean (Gulf Stream)	Black-capped petrel, Bermuda petrel, Audubon's shearwater, white-tailed tropicbird, roseate tern, black scoter	Open ocean waters near the Gulf Stream paralleling the South Atlantic Coastal Plain, and offshore waters of the Gulf of Mexico
6) Southern Pine		
Longleaf Pine Communities	Red-cockaded woodpecker, northern bobwhite, loggerhead shrike, prairie warbler, Bachman's sparrow, Henslow's sparrow, brown-headed nuthatch, American kestrel	Longleaf pine (*Pinus palustris)* flatwoods and savannas, and longleaf sandhills, system is maintained by fire
Mature Loblolly	Field sparrow, brown-headed nuthatch, prairie warbler, Bachman's sparrow, northern bobwhite, red-cockaded woodpecker	Mature lobolly, shortleaf (*Pinus echinata*), and slash pine (*Pinus elliottii) forest; much of longleaf historic longleaf pine and shortleaf pine have been replaced with loblolly and slah pine stands*
Short-Rotation "Plantation" Pine	Northern bobwhite, Bachman's sparrow, field sparrow, prairie warbler, Henslow's sparrow, wood thrush	Primarily loblolly and slash pine, intensive management may support early successional species
7) Oak-Hickory/Tulip Poplar (*Liriodendron tulipifera)/* Pine Forests	Priority species here are the same as for longleaf sandhills	Turkey oak (*Quercus laevis)* and scrub oak (*Quercus spp.*) species in the sandhills, and southern mixed mesophytic forests along bluffs and ravines
8) Riparian/Mixed Mesic Hardwoods (Southern Mixed, Hammocks)	Swainson's warbler, Kentucky warbler, acadian flycatcher, Louisiana waterthrush, cerulean warbler	Riparian-streamside areas, bottomlands and all palustrine wetlands on coastal plains and prairies, upland riparian areas; Hammocks-narrow bands of vegetation confined to slopes between upland sand/clayhill pinelands and bottomlands
**Scientific names provided in Table 1		

III. DESCRIPTION OF THE SAMBI PLANNING AREA

The following description is of the eastern portion of the southeastern coastal plain (BCR 27), referred to hereafter as the South Atlantic Coastal Plain (SACP) (Figure 7). The South Atlantic Coastal Plain, consisting of approximately 10.1 million hectares, includes parts of Virginia, North Carolina, South Carolina, Georgia, Alabama and Florida. The South Atlantic Coastal Plain is home to the largest forested floodplains outside of the Mississippi Alluvial Plain and includes unique non-alluvial wetlands such as the Great Dismal Swamp, pocosins, and Carolina bays. In addition, the largest remnants of former longleaf pine (*Pinus palustris*) ecosystems, and the best remaining examples of "natural"

barrier and sea islands, coastal marsh complexes, and maritime forests and woodlands are found in the SACP. Also present within this region are extensive tidal wetlands and commercial forests. Managed impoundments in coastal areas are important to migrating and wintering dabbling ducks, shorebirds, and waterbirds.

Physical characteristics include a predominantly flat, weakly dissected alluvial plain with active fluvial deposition and shore zone processes along coastlines. Elevation ranges from 0m increasing towards the fall line to 219m. 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 102-152cm except on the Florida Gulf Coast where it is 133-163cm.

Portions of the southern and eastern boundaries of southeastern coastal plain are the Gulf of Mexico and Atlantic Ocean respectively, but the SAMBI planning area extends well offshore to include the entire Southeast U.S. Continental Shelf (BCR 77) and the near shore waters of the Gulf of Mexico pelagic BCR (74) (Figure 2). The waters addressed in this plan include all coastal offshore waters adjacent to the terrestrial portion of the SAMBI planning area in the Gulf of Mexico and waters of the Atlantic Ocean that extend to and beyond the Gulf Stream where high priority oceanic birds inhabit.

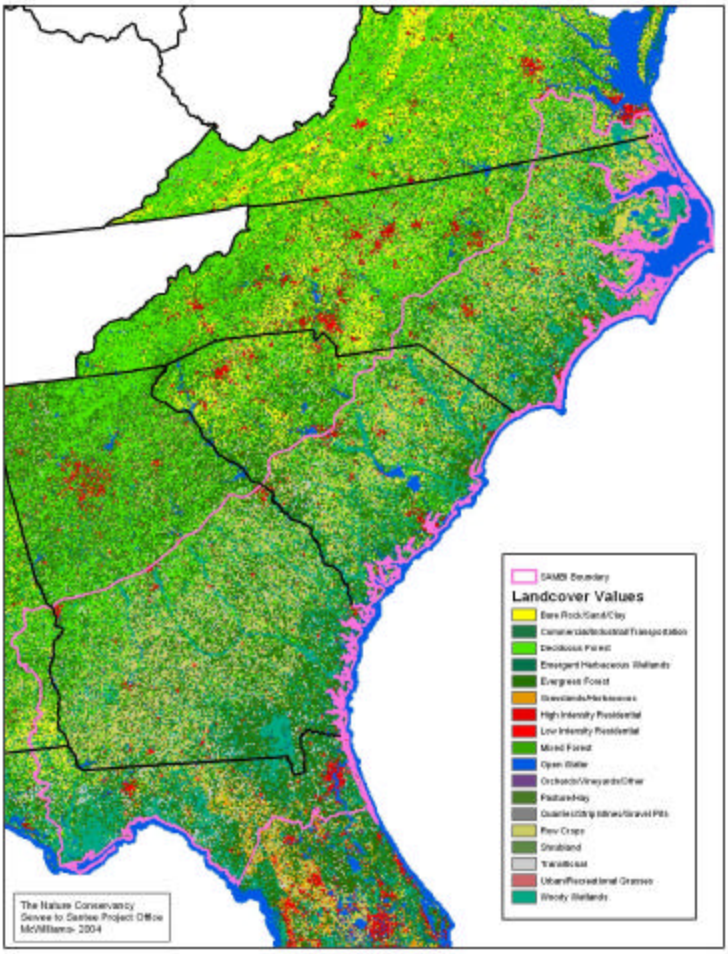


Figure 7. Landcover Types in the SAMBI Planning Area.

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 (*Quercus spp./Carya spp. Pinus spp.*), with intervening southern floodplain forest and pocosins, as well as live oak/sea oats (*Quercus virginiana/Uniola paniculata*) along coastlines. However, disturbances are frequent and therefore, upland forests historically were characterized by open pine (predominantly longleaf) forests. Today, predominant vegetation remains slash pine (*Pinus elliottii*) (Florida) and longleaf pines, with loblolly pine (*Pinus taeda*) becoming common nearer to the Southern Piedmont and the northern portions of this coastal plain (See SAMBI Landcover Map:). Oak/gum/cypress (*Quercus spp./Nyssa spp./Taxodium spp.*) forest cover type is common along floodplains and prevalent species include laurel oak (*Quercus laurifolia*), water tupelo (*Nyssa aquatica*), swamp tupelo (*Nyssa biflora*), swamp chestnut oak (*Quercus michauxii*), cherrybark oak (*Quercus falcata var. pagodaefolia*), and baldcypress (*Taxodium distichum*). Pond pine (*Pinus serotina*) and Atlantic white cedar (*Chamaecyparis thyoides*) become important within the Lower Coastal Plain, especially in pocosin and other non-alluvial wetland types. Live

oak becomes important along coastal areas and frequently is included with other coastal pines and hardwoods in various types of "hammocks."

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

Over 300 bird species occur annually in the South Atlantic Coastal plain as nesting, post nesting dispersers, transients, and /or wintering residents. Among these species, the SACP 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 (*Ammodramus henslowii)*, Wood Stork (*Mycteria americana*), Bachman's Sparrow (*Aimophila aestivalis*), Swallow-tailed Kite (*Elanoides forficatus*), Swainson's Warbler (*Limnothlypis swainsonii*), Painted Bunting (*Passerina ciris*), Black-Capped Petrel (*Pterodroma hasitata*), Bermuda Petrel (*Pterodroma cahow*), Red-Cockaded Woodpecker (*Picoides borealis*), southeastern American Kestrel (*Falco sparverius paulus*), Wayne's Black-Throated Green Warbler (*Dendroica virens waynei*), Saltmarsh Sharp-Tailed Sparrow (*Ammodramus caudacutus*), Red Knot (*Calidris canutus*), Piping Plover (*Charadrius melodus*), and Snowy Plover (*Charadrius alexandrinus*) (gulf coast). Other priority species also of conservation interest include Florida Sandhill Crane (*Grus canadensis pratensis*), White Ibis (*Eudocimus albus*), Loggerhead Shrike (*Lanius ludovicianus*), Cerulean Warbler (*Dendroica cerulea*), Prothonotary Warbler (*Protonotaria citrea*), Seaside Sparrow (*Ammodramus maritimus*), Brown-Headed Nuthatch (*Sitta pusilla*), American Woodcock, Northern Bobwhite, Common Ground-Dove (*Columbina passerina*), Yellow-Throated Warbler (*Dendroica dominica*), Rusty Blackbird (*Euphagus carolinus*), Black Skimmer (*Rynchops niger*), Least Tern (*Sterna antillarum*), Black Rail (*Laterallus jamaicensis*), Peregrine Falcon (*Falco peregrinus*), Bald Eagle (*Haliaeetus leucocephalus*), American Oystercatcher (*Haematopus palliatus*), Red-Throated Loon (*Gavia stellata*), and most migrating and wintering shorebirds and rails, Brant (*Branta bernicla*), American Black Duck (*Anas rubripes*), Lesser Scaup (*Aythya affinis*), Greater Scaup (*Aythya marila*), Tundra Swan (*Cygnus columbianus*), and Wood Duck (*Aix sponsa*).

A. Description of Habitats

Birds are grouped into 8 priority species-habitat suites for the South Atlantic Coastal Plain (Table 3). The priority habitats in this plan are:

1) Grasslands and Associated Habitats
2) Managed and Palustrine Emergent Wetlands and Mudflats
3) Early-Successional and Shrub-Scrub
4) Forested Wetlands

Alluvial

Pocosins, Carolina Bays, Other Non-Alluvial

5) Maritime Communities

Maritime Forest / Shrub-scrub

Estuarine Emergent Wetlands

Beaches and Dunes

Open Ocean

6) Southern Pine Forests

Longleaf / Slash Flatwoods and Savannas and Longleaf Sandhills

Mature Loblolly

Short-Rotation "Plantation" Pine

7) Oak-Hickory / Tulip Poplar / Pine Forests

8) Riparian / Mixed Mesic Hardwoods

For each habitat type, this plan provides the following background discussion:

1) Grasslands and Associated Habitats

Historical grass-dominated ecosystems of the Southeastern coastal plain, east of the tallgrass prairies of Texas and Oklahoma and the coastal prairies of Texas and Louisiana, consisted mostly of relatively small and isolated patches within a forest-dominated landscape, including pitcher plant (*Sarracenia* spp.) bogs, prairies, sedgelands, barrens and glades, savannas, and the Everglades. Despite the loss of native grass-dominated ecosystems over the last two centuries, remnant southeastern grasslands remain centers of biological diversity, with many southeastern endemic species totally dependent upon these ecosystems (DeSelm and Murdock 1993). The uniqueness of grasslands and prairies warrants their restoration and management. Their conservation value is further enhanced because they harbor several federally listed grassland birds.

Also of importance to bird conservation within the South Atlantic Coastal Plain are the longleaf and slash pine savannas formerly found throughout the lower coastal plain and the dry and wet prairies of southern Georgia and northern Florida. Focus here is placed on the grassland component of both sparsely forested savannas and treeless prairies within the coastal plain.

Elsewhere within the coastal plain, the proliferation of pastureland, airfields (both commercial and military), and other "artificially" created grasslands has provided much of the historical grassland bird habitat. While remnant native grasslands still support the core habitats for more highly vulnerable species (e.g., Henslow's Sparrow, Florida Sandhill Crane), many species also benefit from cropland management and pasturelands. However, even common grassland species such as Eastern Meadowlark (*Sturnella magna*) and Savannah Sparrow (*Passerculus sandwichensis*) are showing strong declining trends due to changes in pasture grasslands (from warm-season to cool-season grasses) and more efficient mowing practices. Priority species associated with these

habitats are Henslow's sparrow, Bachman's sparrow, Florida Sandhill Crane, Northern Bobwhite, American Woodcock, Loggerhead Shrike, and Common Barn Owl.

2) Managed and Palustrine Emergent Wetlands and Mudflats

One of the most important habitat types within this category are the freshwater marshes, tidal flats, and emergent tidal marshes. Freshwater marshes are important for supporting significant populations of rails, many species of which are increasingly considered vulnerable (Eddleman et al. 1988). Most recently, apparent declines in the continental population of King Rail (*Rallus elegans*) has brought considerable attention to the importance of freshwater marsh ecosystems to this species, as well as other freshwater marsh species such as Yellow Rail (*Coturnicops novaboracensis*) , Black Rail (*Laterallus jamaicensis*), Least Bittern (*Ixobrychus exilis*), and American Bittern (*Botaurus lentiginosus*). Other intertidal mudflats, dredge spoil areas, and managed impoundments are extremely important for shorebirds, waterbirds, and waterfowl on a seasonal basis. There are approximately 40,500ha of existing managed impoundments from southeast North Carolina to north Florida, and these coastal wetlands provide some of the most significant wetland habitats for waterfowl (Gordon et al. 1998), shorebirds (Weber and Haig 1996), and waterbirds (Bildstein et al. 1990). Some of the highest priority species associated with these habitats are Wood Stork, White Ibis, Little Blue Heron (*Egretta caerulea*), Gull-billed Tern (*Sterna nilotica*), Limpkin (*Aramus guarauna*), Stilt Sandpiper (*Calidris himantopus*), Whimbrel (*Numenius phaeopus*), Blue-winged Teal (*Anas discors*), and Northern Pintail (*Anas acuta*).

3) Early Successional and Shrub/Scrub

Early-successional shrub-scrub habitats originate and are maintained by natural disturbance phenomena including grazing by hoofed animals, tornadoes, hurricanes, ice storms, and most notably fire. Elimination of these phenomena has led to the loss of most shrub-scrub habitats, as well as the longleaf pine forests from the Southeast. Historically, the most stable shrub-scrub habitats in the Southeast were those areas subjected to frequent and large-scale disturbance regimes such as fire. Among the most important habitats is the shrub-scrub habitat is characterized by fire-prone vegetation under mature southern pine forests, including longleaf pine-southern scrub oak, wiregrass (*Aristida spp.*), bluestem (*Andropogon spp.*), saw palmetto (*Serenoa repens*), cutthroat grass (*Panicum abscissum*), ferns, gallberry (*Ilex glabra*), as well as pitcher plant bogs and remnant cedar glades. These areas are home to many vulnerable species most notably among birds Bachman's and Henslow's Sparrows (both addressed under southern pine and grassland habitats respectively). The trend away from large clearcuts on both public land and non-industrial private lands in the South, the trend away from inefficient farming, and still too few efforts to restore natural ecosystem functions in those biotic communities requiring regular disturbance all point to loss of birds dependent on shrub-scrub habitats.

Species of highest concern in these habitats are Bachman's Sparrow, Henslow's Sparrow, Loggerhead Shrike, Prairie Warbler (*Dendroica discolor*), Painted Bunting, Field Sparrow (*Spizella pusilla*), American Woodcock, and Northern Bobwhite.

4) Forested Wetlands (Alluvial and Non-alluvial)

a. Alluvial

Bottomland hardwood forests, alluvial forests, and swamp forests are among those biotic communities in the Southeast adapted to flooded conditions. Various combinations of oaks, especially overcup oak (*Quercus lyrata*), swamp chestnut oak, water oak (*Quercus nigra*), cherrybark oak, willow oak (*Quercus phellos*), Shumard oak (*Quercus shumardii*), water tupelo (gum), swamp tupelo, and baldcypress usually dominate the canopy of mature forests. Cottonwoods (*Populus spp*.), willows (*Salix spp*.), river birch (*Betula nigra*), and elms (*Ulmus spp*.) dominate disturbed sites.

Major recognized wetland forest types within southeastern floodplains are: (1) cottonwood, (2) black willow (*Salix nigra*), (3) overcup oak/water hickory (*Q. lyrata/Carya aquatica*) , (4) sweetgum/willow oak (*Liquidambar styraciflua/Q. phellos*), (5) sugarberry/American elm/green ash (*Celtis laevigata/Ulmus alata/Fraxinus pennsylvanica*), (6) eastern sycamore/sweetgum/American elm (*Platanus occidentalis/L. styraciflua/U. alata*), (7) willow oak/water oak/laurel oak, (8) swamp chestnut oak/cherrybark oak, (9) baldcypress, (10) baldcypress/water tupelo, (11) water tupelo/swamp tupelo, and (12) sweetbay/swamp tupelo/red bay (*M. virginiana/N. sylvatica var. biflora/Persea borbonia*) (Sharitz and Mitsch 1993).

There has been extensive drainage and conversion of forested wetlands throughout the Southeast, from over 18 million ha before the mid-1800=s to just over 12 million ha in 1985, an overall decline of about 30% (Hefner et al. 1995). Almost all of the remaining 70% of forested wetland in the Southeast has been cutover at least once and frequently fragmented in the process. This fragmentation has been associated with greater losses of forest-interior and area-sensitive species (e.g., the now extirpated Ivory-billed Woodpecker and Bachman=s Warbler) due to the almost complete elimination of large tracts of mature forest age-classes.

Outside the Mississippi Alluvial Plain, the largest remaining "relatively intact" forested wetland systems are all within the South Atlantic Coastal Plain. Protection of existing floodplain forested wetlands within the Roanoke, Winyah Bay (Pee Dee and Waccamaw), Francis Marion National Forest (Santee and Cooper), ACE Basin, Savannah, Altamaha, Lower Suwannee, and Apalachicola rivers should be top priority.

Species in need of conservation attention within the South Atlantic Coastal Plain in decreasing order of potential vulnerability include Swallow-tailed Kites**,** coastal populations of Black-throated Green Warblers, Swainson's Warblers, and Prothonotary Warblers. In addition, local populations of Cerulean Warblers and Florida Short-tailed Hawks occur as high priority breeding species in this area. Although Yellow-throated Warbler is not as high a priority species, it still warrants attention due to unclear population trends and association with very large and tall trees (fast disappearing from the coastal plain). Other species of importance here are American Woodcock, Louisiana Waterthrush (*Seiurus motacilla*), and Limpkin.

b. Pocosins, Carolina Bays, Other Non-Alluvial

Pocosins are made up of shrub-scrub ("low"), often dominated by pond pine, and forested ("high") dominated by bays, associated wetlands, and associated uplands (from canebreaks to Atlantic white-cedar). These areas are unique to the Southeast and are restricted mainly to Virginia and North Carolina (except for smaller areas in the Winyah Bay area of South Carolina). Seventy percent of an estimated 1.4 million ha of potential pocosin habitat is located in North Carolina (Richardson and Gibbons 1993). However, less than one third of the original area can now be considered intact, with about another one third irrevocably altered (Richardson and Gibbons 1993). In coastal North Carolina, nearly all of the forested wetlands, much of which were pocosin, were converted to non-wetlands uses (e.g., conversion to pine plantations; Hefner et al. 1995). Today, major timber companies own over 40% of pocosin habitats in North Carolina (Sharitz and Gibbons 1982). More dramatically, both canebrake and Atlantic white cedar (the two successional extremes within pocosin situations) have been reduced to one percent of their original pre-settlement occurrence (Frost 1995). Fire suppression led to the decline of canebreak and pond pine, while Atlantic-white cedar, occurring in pocosin areas with low fire frequency (usually over 100 years between fires), was converted for agriculture and timber production.

Carolina bays occur from extreme southeastern Virginia to south Georgia. Prior to European colonization, there were probably 10,000-20,000 Carolina bays, mainly found in South Carolina. Presently, few Carolina bays can be considered untouched by deleterious human activities. Both pocosins and Carolina bays have been converted to farmlands, pine (principally) or hardwood monocultures, or lost to peat mining. In addition, areas around Carolina bays are highly susceptible to commercial and residential development (Richardson and Gibbons 1993).

Black-throated Green Warblers, Swainson's Warblers, Prothonotary Warblers, and Worm-eating Warblers (*Helmitheros vermivorus)* are among the species requiring attention in non-alluvial wetlands. In addition, Ovenbird (*Seiurus aurocapilla*), American Redstart (*Setophaga ruticilla*), and Black-and-white Warbler (*Mniotilta varia*) are locally important in pocosins and Carolina Bays. All of these species, except ProthonotaryWarbler, are apparently isolated from Appalachian population centers. In pond pine dominated pocosins, a number of pine specialists may be supported, including Red-cockaded Woodpecker (*Picoides borealis*), Brown-headed Nuthatch, Red-headed Woodpecker (*Melanerpes erythrocephalus*), and Chuck-will=s-widow (*Caprimulgus carolinensis*). Interestingly, pocosins subject to frequent fire is one of the few habitat types that legitimately support both priority pine specialists (associated with the open pine canopy) and otherwise forested wetland specialists (associated with cane and/or dense shrub layer).

5) Maritime Communities (shrub/scrub and mature forest, estuarine emergent wetlands, beaches and dunes, open ocean)

a. Shrub-Scrub/Mature Forest

Maritime woodlands are found on the leeward side of shrub-scrub thickets or on the bay side of islands. Maritime woodlands are relatively tolerant of salt spray, bright sunlight, wind shear, drought conditions, and nutrient-poor soils. Most sites are dominated by oaks, pines, red bay, and numerous understory shrubs and are referred to as coastal hammocks or temperate broad-leaved evergreen forests, and are considered a part of

southern mixed hardwood or temperate hardwood forest types (Platt and Schwartz 1990, Ware et al. 1993). Climax maritime woodlands are characterized by live and laurel oaks with sweetbay (*Magnolia virginica*) as a co-dominant. The presence and dominance of live oaks are indicative of the most advanced successional stage among maritime woodlands. These advanced woodlands are today largely restricted to the Atlantic Coast, especially on the Sea Islands. Alternatively, the presence and dominance of laurel oak, young loblolly, or slash pine is indicative of younger successional stands. Successional scrub-shrub on old stable dunes are frequently dominated by saw palmetto (North Florida Atlantic), yaupon holly (*Ilex vomitoria*), and wax myrtle (*Myrica cerifera*) growing in dense thickets.

Historical maritime communities, comprising about 648,00ha in the Southeast, have undergone dramatic changes since European/African colonization. Native Americans influenced the condition of maritime communities, but the permanent settlements and commerce centers of colonization changed the nature of human interaction in these areas. Today, the extent and rate of recovery of maritime communities from natural disturbances is dependent upon human history (both Native and European/African) as well as dredge and fill beach/dune operations and development pressure.

As of the mid-1970's, less than 10% of maritime landcover was in forest (most remnants now in Sea Islands, N. Florida Atlantic, and Central Gulf). Wetlands made up over 50% of landcover, with smaller percentages in dunes and beaches, rangeland, agriculture, and urban areas. Although loss of coastal wetlands has slowed since the 1970's, development of coastal areas continues, to the detriment of upland maritime woodlands, dunes, and beaches (Culliton et al. 1990, Moore et al. 1993). Development is most obvious along the Florida Atlantic Barrier Islands (over 50% of present lands use) and least obvious among the Sea Islands (less than 10%). Almost all maritime woodlands that have not been removed completely have been altered.

Maritime forest and scrub-shrub habitat is perhaps most important for neotropical migratory landbirds moving to and from their Caribbean and Latin American wintering grounds. However, unpredictable factors (i.e., weather) have made it difficult to quantify the importance of specific areas at any one time. Thus, conservation must be measured in terms of decades with the assumption that all forest patches are potentially important, until better techniques provide resolution of concentration sites.

The highest priority species associated with these habitats are eastern Painted Bunting, Prairie Warbler, Common Ground Dove, Northern Parula (*Parula americana*), yellow-throated warbler, and many transients including Bicknell's Thrush (*Catharus bicknelli*), Kirtland's Warbler (*Dendroica kirtlandii*), Cape May Warbler (*Dendroica tigrina*), Black-throated Blue Warbler (*Dendroica caerulescens*), and Connecticut Warbler (*Oporonis agilis*).

Many nearctic-neotropical migratory landbirds orient southeastward during autumn migration to their tropical (primarily West Indian and South American) wintering areas. The South Atlantic coastline and Peninsular Florida, particularly maritime woodlands, appear to be critically important during this migration. Gulf Coast maritime woodlands are more important than South Atlantic woodlands for most spring migrants, and support large number of autumn migrants as well (Moore and Woodrey 1995).

b. Estuarine Emergent Wetlands

Estuaries, which include tidal flats and emergent wetlands, border maritime woodlands in many areas. Estuaries separate islands from each other or from the mainland and are well known for their importance to commercial fisheries and as environmental filters. In addition, tidal flats are important foraging areas for many migratory and wintering waterbirds, colonial nesting birds, and raptors. Estuarine emergent vegetation provides cover and foraging for both nesting and wintering species such as rails, bitterns, wrens, and sparrows.

The most important species associated with these habitats are Nelson's Sharp-tailed Sparrow (*Ammodramus nesloni*), Saltmarsh Sharp-tailed Sparrow, Seaside Sparrow complex (*Ammodramus maritimus*), Black Rail, Yellow Rail, Wood Stork, and Sedge Wren (*Cistothorus platensis*).

c. Beaches and Dunes

Beaches and overwash areas provide important foraging habitat for migratory and wintering shorebirds, resident colonial nesting water birds, and migratory raptors. Beaches above the high tide line and dunes provide nesting habitat specifically for several high priority shorebirds. In addition to avian communities, beaches and dunes are important for federally listed plants and animals including seabeach amaranth (*Amaranthus pumilis*), nesting sea turtles, and oldfield (beach) mice. The popularity of beaches, particularly during the summer, has resulted in numerous conflicts between beach nesting species and humans. As of the mid-1970's, less than 15% of maritime land cover was in beaches and dunes, and coastal development is accelerating in many areas (Culliton et al. 1990, Moore et al. 1993).

Important species here are American Oystercatcher (*Haematopus palliatus*), Wilson's Plover (*Charadrius wilsonia*), Cuban Snowy Plover, Piping Plover, Red Knot, Least Tern (*Sterna antillarum*), Black Skimmer, and Reddish Egret (*Egretta rufescens*).

d. Open Ocean (Gulf Stream)

Waters within or near the Gulf Stream section paralleling the South Atlantic Coastal Plain constitute the open ocean portion of this physiographic area. These open waters are the major feeding grounds for Black-capped Petrels. In addition, many other species of wholly or partially pelagic birds occur in large numbers as transients or non-breeding residents, such as White-tailed Tropicbird (*Phaethon lepturus*) and Audubon's Shearwater (*Puffinus lherminieri*). Imminent threats at this time appear to be few except for the constant possibility of take from longline fisheries and from oils spills that can result in the death of many pelagic birds. Periodic resurgence of interest in exploration for oil deposits within the outer continental shelf, especially off the North Carolina coast, continues to be cause for concern. Additionally, offshore waters in the Gulf of Mexico that border the planning area are important for Northern Gannet (*Morus bassanus*), Common Loon (*Gavia immer*), and Brown Pelican (*Pelacanus occidentalis*). A separate document relative to pelagic bird conservation for the Southeast U.S. Continental Shelf is

being written, and the more important components of that document are contained within this Implementation Plan.

Along the South Atlantic Coastal beaches, research into the rates of and reasons for wintering Common Loon mortality should help provide for a better understanding of the risks to seabird populations in this area. Specifically, coastal gillnets are now suspected as a major cause of mortality for Red-throated Loons, which are heavily concentrated in North Carolina waters during winter, and many other pursuit diving seabirds (Forsell 1999). Better monitoring of beach birds especially in North Carolina could help to develop better fishery regulations to eliminate this conflict and should be a high priority.

Also, the increasing popularity of pelagic birding (and whale-watching) boat trips is an important aspect of public outreach. Such trips help encourage conservation of offshore bird habitats through economic enrichment of local coastal communities. At least occasional pelagic trips originate from every state within the South Atlantic Coastal Plain.

Important species here are Black-capped Petrel, Bermuda Petrel (*Pterdroma cahow*), Audubon's Shearwater, Red-throated Loon, Sooty Tern (*Sterna fuscata*), Manx Shearwater (*Puffinus puffinus*), and Roseate Tern (*Sterna dougallii*).

More detailed information is available in Section V. Pelagic Bird Conservation.

6) Southern Pine Forests

a. Longleaf/Slash Flatwoods and Savannas, and Longleaf Sandhills

Southern pine forests, with longleaf pine occurring at least as a co-dominant, covered an estimated 37.3 million ha at the time of European settlement (about 30.4 million ha where longleaf was dominant). Forests stretched from southeast Virginia (where now reduced to a few remnant trees) to east Texas, interrupted only by major floodplain forested wetlands and occasional prairies (Frost 1993). Along or near coastlines slight shifts in hydrology and salinity favor slash pine over longleaf in flatwoods and savannas, but for all practical purposes, bird species responding more to age and structural characteristics than dominant pine species (though longleaf is still preferred where site conditions allow). Pre-settlement estimates place longleaf dominated forests at 52% of all uplands and 36% of the entire southeastern landscape. By the 1930's, most of the 92 million acres had been cut, with about two thirds regenerated to other pine species or converted to other land uses (Croker 1987, Walker 1991, Frost 1993).

Today, less than 3% of the original longleaf (less than 2% of the southeastern landscape) forests remain. If systems drastically altered by fire suppression are excluded, less than 1% (or 272,970ha) remain (Frost 1993). The conversion of many natural pine and hardwood stands to short-rotation pine plantation (mostly loblolly or slash) during this century has resulted in an almost complete elimination of functioning longleaf pine ecosystems, as well as the breakup of large stands of forested wetlands discussed earlier (Croker 1987, Ware et al. 1993). The loss of longleaf pine ecosystems has led to the rarity and endangerment of at least 70 plant taxa, particularly in the Coastal Plain and Florida peninsula but also in the Southern Piedmont and other physiographic areas in the Southeast (Noss et al. 1995). Among vertebrate animals, the future successful

conservation of flatwoods salamander (*Ambystoma cingulatum*), gopher frog (*Rana capito*), eastern indigo snake (*Drymarchon corais couperi*), gopher tortoise (*Gopherus polyphemus*), coastal plain fox squirrel (*Sciurus niger*) populations, and many other species may well depend in part on the restoration of longleaf pine ecosystems and the reinstitution of fire as a management tool.

Unlike other temperate forest ecosystems, the high level of biodiversity found in natural longleaf pine forests is mostly restricted to one structural layer, that is, the condition of the ground layer. Frequent growing-season fires are essential for maintaining the density of bunch grasses (principally wiregrasses in the east and bluestems towards the west), forbs, and vines, while keeping the shrub layer to a minimum over a burning cycle of a few years (Frost 1993). In turn, it is this ground layer composition that supports many of the plant and animal species unique to longleaf pine ecosystems.
{tc "

Southern Pine Forests\: Longleaf/Slash Flatwoods and Savannas, and Longleaf Sandhills " \l 3}

Priority species within the southern pine forests include the Red-cockaded Woodpecker Bachman's Sparrow, Henslow's Sparrow (savannas/flatwoods), Brown-headed Nuthatch Prairie Warbler (sandhills/scrub oak, GA, NC), southeastern American Kestrel (savannas/sandhills/sand pine-scrub oak), Loggerhead Shrike (savannas), Northern Bobwhite, and Red-headed Woodpecker.

b. Mature Loblolly

Although longleaf pine is ecologically the most important of the southern pines within the coastal plain, other species have replaced the longleaf as more economically important. In the South Atlantic Coastal Plain, faster growing slash and loblolly pines are of more economic importance.

Loblolly pine is an excellent natural invader of disturbed sites and today is the most frequent pine found in old field successional stages. Even in areas where longleaf is still a numerically important species, disturbance and fire suppression during the last two centuries have led to an increase of loblolly pine (e.g., most population and area goals in the longleaf discussion take into account the prevalence and use in many areas of loblolly, even for red-cockaded woodpeckers). Nevertheless, small patches of mature loblolly pines prior to European settlement may have played important roles for some species and certainly are important today (e.g., Swallow-tailed Kite nest requirements under Forest Wetlands section).

High priority species for this habitat association is the same as for longleaf pine, with the addition of Field Sparrow.

c. Short-Rotation "Plantation" Pine

On private industrial lands in the South Atlantic Coastal Plain, short-rotation pine can be important as an early-successional habitat. Short-rotation pine plantations are composed of either slash or loblolly pine. Depending on management emphasis, some "older" short-rotational pine stands may be managed to also support some otherwise hardwood dependent species. Although not as important as regularly burned late successional pine, high densities of clearcuts on private industrial lands likely support many early-successional species (principally Northern Bobwhite, Bachman's and Field Sparrows, Prairie Warbler, and, in northeastern North Carolina and southeastern Virginia, breeding Henslow's Sparrows). In addition, edges and riparian streamside management zones may support transients. Pine canopies with a hardwood midstory and understory may provide marginal to suitable habitat for other priority species such as Wood Thrush (*Hylocichla mustelina*) and Hooded Warbler (*Geothlypis nelsoni*).

7) Oak-Hickory/Tulip Poplar/Pine Forests

Although some literature suggests that extensive upland hardwood-pine mixed forests existed at least north of the Savannah River within the South Atlantic Coastal Plain it is generally recognized today that upland hardwoods prior to European colonization were restricted to sites where fires were infrequent. Two major types of forests are recognized: (1) turkey oak (*Quercus laevis*) and other scrub oak dominated stands in protected sandhill sites and (2) southern mixed mesic forests generally along protected bluffs and ravines. Turkey/other scrub oak stands do not appear to support any high priority birds within the South Atlantic Coastal Plain that are not already dependent on longleaf sandhills and are not discussed further here. Southern mixed mesic forests, though very local, are important centers of regional biodiversity and provide high quality habitats for several priority hardwood species, at least locally. Species of concern in this habitat association include Wood Thrush, Hooded Warbler, and Chuck-will's-widow.

8) Riparian/Mixed Mesic Hardwoods (Southern Mixed, Hammocks)

The term riparian refers to streamside areas. In the present context, riparian habitats include bottomlands and all palustrine wetlands in the coastal plain. However, riparian forests may be dominated by tree and shrub species more typical of uplands throughout southeastern interior physiographic areas and locally in the coastal physiographic areas (forested wetlands in narrow floodplains, loess bluff oak/hickory and mixed mesic hardwoods). In many situations, upland riparian habitats are as important as wetland habitats to both aquatic and terrestrial fauna associated with streams and rivers, especially in those lands where there is high topographic relief or circumvented soils.

Hammocks are best defined as narrow bands of vegetation confined to slopes between upland sand/clayhill pinelands and bottomlands, with species composition determined by relative moisture retention and fire frequency. Hydric stands are distinguished from other forested wetlands by very intermittent flooding and some fire. High humidity and a consequent low frequency of fire distinguish hydric stands from mesic and xeric hammocks (Vince et al. 1989). Hydric hammocks provide important habitats for many species of wildlife, including Swallow-tailed Kite and black bear (*Ursus americanus*). Located near fire maintained longleaf pine and xeric scrub ecosystems, xeric hammocks are subject to the highest fire frequency, but retain enough moisture to support stands of sizable oaks and other hardwoods.

Mixed mesic hardwoods collectively are important within the coastal plain from North Carolina to Texas. These forests are referred to or included within southern mixed mesic hardwood forests, southern mixed hardwood forests, southern hardwood forests, temperate hardwood forests, temperate broad-leaved forests and mesic hammocks (Platt and Schwartz 1990, Hamel 1992a, Ware et al. 1993). Mixed mesic forests presently reach their greatest development within the Florida panhandle and adjacent to southwestern Georgia and Peninsular Florida.

In areas draining into the Apalachicola River, mesic hammocks are characterized by the codominance of southern magnolia (*Magnolia grandiflora*) and American beech (*Fagus grandifolia*). These mesic hammocks certainly constitute the most important of southeastern riparian woodlands by supporting a number of locally occurring endemic species, such as Florida yew (*Taxus floridana*) and Florida torreya (*Torreya taxifolia*)

along the Apalachicola Bluffs, as well as birds and other animals more characteristic of forested wetlands.

Priority species within riparian/mixed mesic hardwood habitat include Swainson's Warbler, Kentucky Warbler, Acadian Flycatcher, Louisiana Waterthrush, and other transients. In most physiographic areas where the highly vulnerable Cerulean Warbler and the usually rare Swainson's Warbler are found, they are mostly restricted to (and are certainly most common in) riparian habitats within largely forested landscapes. Acadian Flycatcher and Louisiana Waterthrush are always more common and widespread than the two warbler species above, but still consistently become rare away from riparian habitats in most physiographic areas.

B. Threats to Habitats and Populations

There are several dominant habitat threats that occur in varying severity within each state in the South Atlantic Coastal Plain. In no particular order, they are: residential and commercial development (particularly along the coastline), water quality and quantity, silvicultural conversion or negative silvicultural practices, fire exclusion or alteration of fire regimes, nonnative invasive species, agricultural practices and mining practices. For each state these threats rank differently just as they do for each bird group. Shorebirds are more likely to be affected by development along the coast than by mining practices. These threats represent the major concerns for land managers when considering reasons for habitat decline for migratory birds.

Each habitat type, within the South Atlantic Coastal Plain, also has its own set of threats. For example, the Longleaf Pine communities, which exist predominantly in the South Atlantic Coastal Plain, are fire-dependent and for this community type fire exclusion may be a higher priority threat than for other communities. It is safe to say that, for the majority of the habitat types listed in this document, incompatible development looms largest. Development brings with it a host of problems usually the most destructive to wildlife is the reduction or alteration of available habitat. This covers many facets from pollution to incompatible forestry practices.

There is no doubt that human disturbance (including development) is the largest threat to birds, especially species existing along the coast. Beaches, marshes and other waterfront areas are being overused by humans and not enough space is left for the habitat needs of many bird species. Colony sites need to be posted and rules limiting intrusion need to be enforced.

Other threat concerns are: introduced and natural predators, competitors, conflicts with offshore fisheries, bird/ aircraft strikes, light impacts, over-hunting, oil and hazardous materials, debris ingestion and entanglement and in some cases, abundant species conflicts.

IV. GOALS AND OBJECTIVES

A. Overall Goals and Objectives

Two general and very high priority habitat goals for this region are:

(1) to provide optimal breeding habitat to maintain and increase populations of priority species,

(2) to provide high quality managed habitat to support requirements of species migrating through or spending winter in the region, and

These goals are common in all of the major bird conservation plans that are being addressed in this Implementation Plan, and are therefore appropriate to present here as goals for "all bird" conservation. Primary goals for all species associated with this effort can be found at links to the other major bird conservation plans at www.nabci-us.org.

SAMBI Plan Goals:

1. Identify priority species and their associated habitats.
2. Delineate focus areas for existing and emerging bird initiatives.
3. Develop population objectives for priority species (where applicable) and/or develop habitat objectives for helping to meet the population and conservation needs of the region.
4. Develop partnerships and implementation strategies to meet stated population and/or habitat objectives.
5. Establish effective and cost-efficient evaluation and monitoring protocols to measure the success in accomplishing population and/or habitat objectives and assist in the adaptive management process.
6. Develop research projects and survey methods to address assumptions underlying population and habitat objectives.
7. Identify habitats and assign priority to areas where this Initiative would be most effective and positive in delivering conservation, while not duplicating other efforts.
8. Provide estimates as to what habitats presently exists (where and how much), identify quantity of habitat and/or numbers of birds/populations desired and the restoration/management objectives necessary to reach that goal.
9. Utilize existing GIS and other current mapping capabilities to recommend and wisely direct conservation efforts in the SACP, in conjunction with planning efforts in the East Gulf Coastal Plain, and with other BCR/JV planning efforts.

B. Regional Goals for Population and Habitat

1. Population Goals

Overall Objective:

Maintain, stabilize, or increase populations of high priority breeding, transient, and wintering species (landbird).

Goals:

Shorebirds:

- Presently, maintain breeding populations and ensure high reproductive success to ensure sustainable populations of each of the highest priority species in the region.
- During the next 50 years double the breeding population size for each of the highest priority species in the region and/or through population viability analyses determine population levels needed to ensure long-term viability.

Landbirds:
-Stabilize or increase populations of high priority breeding, transient, and wintering bird species.

Waterbirds:
-Recovery of declining and otherwise vulnerable high priority species and subspecies (especially listed taxa) to healthy population levels region-wide.
-Maintenance of healthy populations of other species, again by identifying population and habitat objectives.
-Management of depredation issues, including, the establishment of maximum acceptable population reduction objectives if justified.

Waterfowl:
- Recovery of declining species by enhancement of breeding grounds.
- Maintain or manage existing healthy populations through knowledge of current population and habitat status and objective population status.
- Continue to revise population reduction objectives that concern the managed harvest of waterfowl, while maintaining that harvest of waterfowl can be desirable and consistent with conservation.

- Maintain the current diversity of duck species throughout North America and achieve a continental breeding population of 62 million ducks (mid-continent population of 39 million) during years with average environmental conditions, which would support a fall flight of 100 million.
- Attain a black duck mid-winter population index of 385,000.

2. Habitat Goals

Overall Objectives:

- Provide adequate high quality habitats for high priority breeding, transient, and wintering species.
  - Increase the number of acres of managed wetlands for shorebirds and waterbirds, particularly for shorebirds during fall migration.
  - Increase quality and availability of stop-over habitat for transient landbird species.
  - Protection of forested wetlands.
  - Restoration and management of longleaf pine forests.
  - Protection of shoreline beaches and dunes.
  - Restoration and protection of estuaries.
  - Protection of maritime forests.

Goals:

Shorebirds:

1. Provide optimal breeding habitat to maintain and increase priority species in the planning region. The goal for breeding habitat is to provide sufficient habitat to maintain and increase priority species in the planning region. The objectives would be (1) to maintain enough high quality habitat to support a present breeding population of 1000 pairs of American Oystercatchers, 300 pairs of Snowy Plovers, 1500 pairs of Wilson's Plovers and 55 pairs of Piping Plovers, and (2) to determine what is needed to double breeding population size for each of these species during the next 50 years.

2. Provide high quality managed habitat to support successful migration through and over-wintering within the planning region, particularly during fall migration.

3. Maintain disturbance frequencies at breeding, foraging and roost sites below that which would be expected to exceed tolerance levels for successful reproduction or for maintaining fat stores needed for long-distance migration.

4. Maintain washovers, sandflats, and mudflats, especially on barrier islands created by hurricanes; that is, do not immediately attempt "repairs" to hurricane created habitat.

Landbirds:

1. Retain and restore 1.3 million acres of native warm season grass habitats.

2. Provide at least 300,000 acres of five year idle lands, 300,000 acres of annuals, and 600,000 acres of ten-twenty year idle lands.

3. Maintain and improve the habitat quality of eight forested wetland sites for Swallow-tailed Kite, maintain and stabilize at least one forested wetland site for Cerulean Warbler, at least ten sites for Wayne's Black Throated Green Warbler, and thirty sites for Swainson's Warbler, which requires ten patches over 100,000 acres, fifteen patches over 20,000 acres, 7 patches over 10,000 acres, and 30 patches over 6,000 acres.

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

5. Increase long leaf pine forest acreage form 1.5 million acres to over 2.2 million acres and improve conditions favoring warm season grassy ground cover, on at least 650,000 acres by year 2025.

Waterbirds:

1. New Regional Goals need to be added.

Waterfowl:

1. Continue to manage breeding and foraging sites for the long-term success of the 11 stable populations of waterfowl.

2. Increase Northern Pintail population size to 5,600 from 2,765. Increase American Black Duck to 640 from 381. Increase Lesser and Greater Scaup populations to 6,300 from 4,051.

3. Need to get some ideas from Tim.

C. State Goals and Objectives

Some states in SAMBI have attempted to step down continental and regional population or habitat objectives to state level BCR objectives. Generally, this is difficult to do, yet existing population and habitat objectives for some species allowed for such a step down, particularly where objectives of high priority species functioned to incorporate objectives of other species in similar habitats. Additionally, existing regional objectives for the various bird conservation plans are not entirely explicit about where to place quantifiable habitat conservation objectives, and therefore, SWGs were able to evaluate such objectives in their state relative to stated goals and identify where best to target such conservation. One of the best working examples of this step down process is in the Setting Population and Habitat Objectives section above regarding allocation of eight patches of forested wetland habitat for the conservation of Swallow-tailed Kite, Wayne's Black-throated Green Warbler, and Swainson's Warbler. The results of this process are outlined in the state sections for South Carolina, Georgia, and Florida below. Some states did not feel comfortable with stepping down objectives, and will therefore rely upon objectives outlined in the various national and regional bird conservation plans, and from objectives defined in their State Comprehensive Wildlife Plans. Finally, at least one bird conservation plan, The Northern Bobwhite Conservation Initiative (NBCI), has quantifiable objectives for the restoration of Northern Bobwhite habitat segregated by BCR, State, and habitat type (Table 6). Population and habitat objectives that have been developed by states are presented below.

State Focus Areas

Each state has developed discreet focus areas for waterfowl, shorebirds, waterbirds, and landbirds. Two states, Georgia and North Carolina, have developed focus areas for Northern Bobwhite and other grassland species. Additionally, Florida has identified two pelagic focus areas. These focus areas are presented at the end of each of the state sections below.

1. Virginia

Virginia has not developed or stepped down any national or regional population or habitat objectives at this time. However, Virginia will rely upon existing objectives outlined in existing bird conservation plans, and objectives defined in their State Comprehensive Wildlife Plan. Additionally, quantifiable objectives for the restoration of Northern Bobwhite habitat are outlined for Virginia in Table 6.

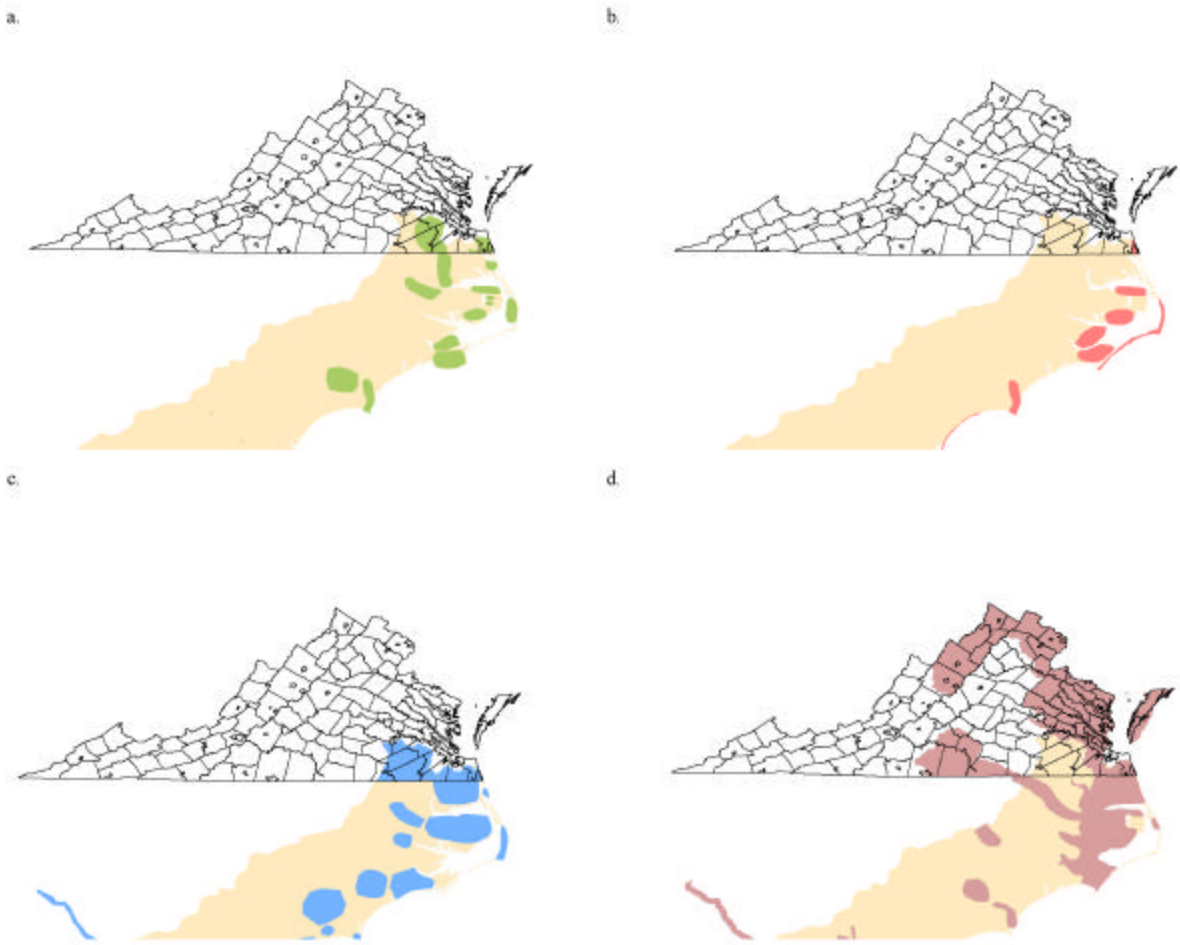


Figure 8. "All Bird" Focus Areas in Virginia. a) waterbird; b) shorebird; c) landbird; d) waterfowl.

2. North Carolina

Waterfowl

-Support a population of 100,000 Tundra Swans
-Support a population of 60,000 Canada Geese
-Maintain current levels of Snow Geese (30,000)
-Breeding objective for American Black Duck is 500 pairs

Waterbirds

The following table was developed for the Roanoke-Tar-Nuese-Cape Fear Ecosystem, and the SWG of North Carolina equates this ecosystem with the geographic SAMBI area for North Carolina, therefore, goals are identical.

Colonial Waterbird Goals for Roanoke-Tar-Neuse-Cape Fear Ecosystem

	Statewide	SAMBI	

Species	# Nests	# Sites	# Nests	# Sites	State Status
White Ibis	8000	6	8000	6	W2
Glossy Ibis	500	7	500	7	SC
Brown Pelican	4000	5	4000	5	SC (PD)
Green Heron*					
Black-crowned Night Heron	250	10	250	10**	
Yellow-crowned Night Heron*					W2, W3
Great Egret	2500	30	2500	30	
Cattle Egret	No management need; No goal set; State will continue to monitor				
Snowy Egret	800	15	800	15	SC
Tricolored Heron	1500	15	1500	15	SC
Little Blue Heron	1200	15	1200	15	SC
Least Tern	2000	25	2000	25	SR (PSC)
Forster's Tern	1100	15	1100	15	W2
Sooty Tern	NA				
Royal Tern	15000	6	15000	6	
Sandwich Tern	2700	6	2700	6	W2, W5
Caspian Tern	25	1	25	1	SR
Common Tern	2500	20	2500	20	SR, (PSC)
Gull-billed Tern	300	6	300	6	T
Black Skimmer	1000	15	1000	15	
Laughing Gull	No management need, but no < 10000				
Herring Gull	No management need, but no > 1000				
Great Black-backed Gull	No management need, but no > 200				

* = No accurate data on which to base a state or ecosystem goal

** = Coastal or estuarine area (not counting river swamps)

Great Blue Heron, Anhinga, and Double-crested Cormorants numbers and estimates remain unknown and nest primarily inland; goals not established, but need to be.

T = Threatened; SC = Special Concern; SR = Significantly Rare; PD = Proposed De-listed; PSC = Proposed Special Concern; W = Watch List (see NC Natural Heritage Program for numeric code)

Shorebirds

-Provide 3,800 acres (1539ha) of managed wetlands for shorebirds during migration, particularly fall migration when many wetlands have been flooded up for waterfowl food production
-Population objective of 600 pairs of Wilson's Plovers in the next 50 years
-Population objective of 100 pairs of Piping Plovers in the next 50 years
-Population objective of 200 pairs of American Oystercatchers in the next 50 years

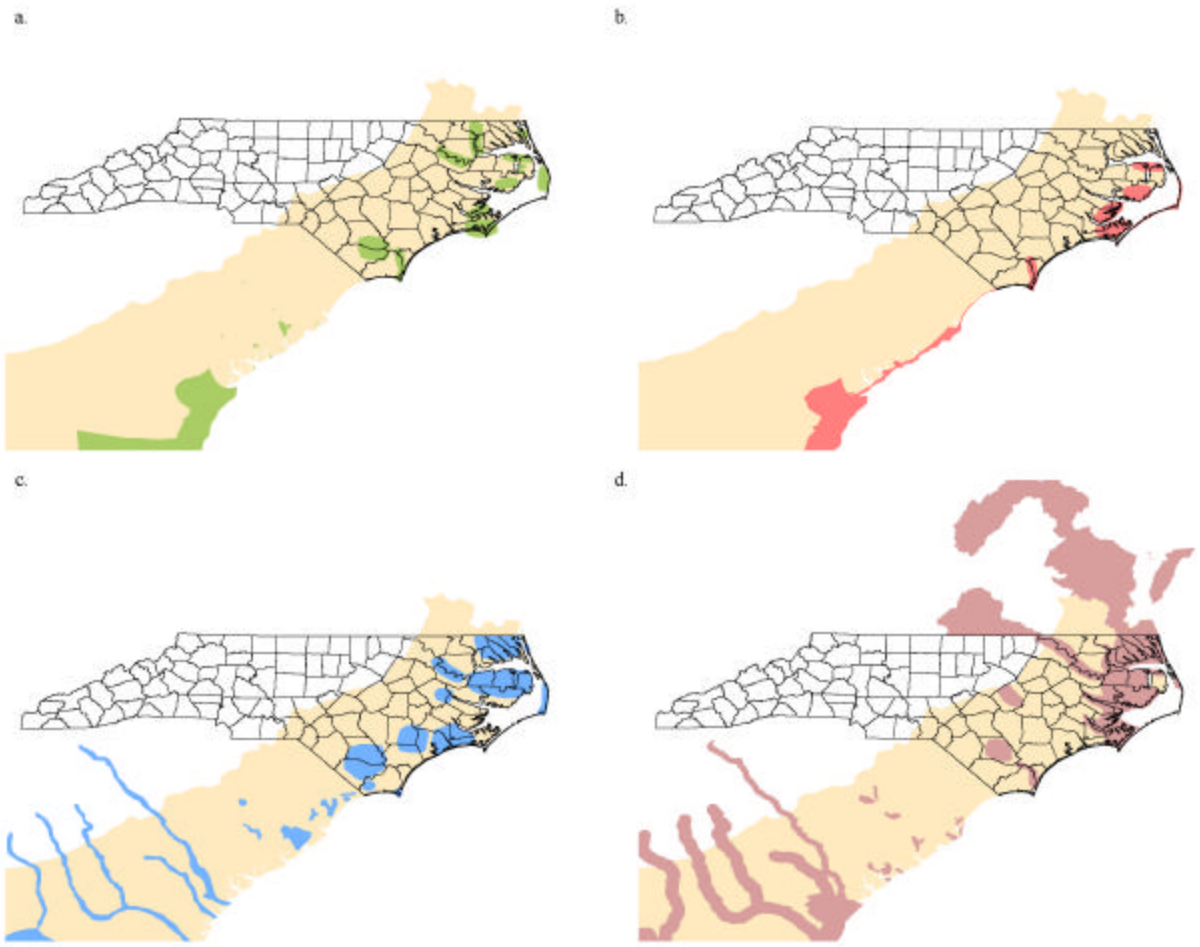
Landbirds

-Restore and maintain at least 7,000 acres (2835ha) of pocosin/savannah for 5,000 pairs of Henslow's Sparrow
-Provide 315,000 acres (127,575ha) of warm season grasses for Northern Bobwhite
-Restore 106,000 acres (42,930ha) of longleaf pine community

-Support and maintain 255,500 acres (103,478ha) of Red-cockaded Woodpecker (RCW) habitat, while providing habitat for Southeastern American Kestrel, Brown-headed Nuthatch, and Bachman's Sparrow. Focus on Fort Bragg, Camp Lejeune, and the Suffolk Scarp.
-Restore 89,000 acres (36,405ha) of pond pine pocosin on public lands, to assist in supporting an RCW population of 500 groups
-Restore, enhance, and manage 42,000 acres (17,010ha) of Atlantic white cedar on National Wildlife Refuges in northeastern North Carolina, mixed with other non-alluvial forested wetlands for Wayne's Black-throated Green Warbler and Swainson's Warbler.
-From the Dismal Swamp to the South Carolina state line, provide seven patches of 100,000 acres (40,500ha), four patches of 10,000-20,000 acres (4,050-8,100ha), and one patch of 6,000-10,000 acres (2,430-4,050ha) of forested wetlands
-Determine importance of maritime forest to transient species and Painted Bunting
-Identify maritime pine savannah sites and restore through prescribed burning to support species associated with longleaf pine ecosystems
-Develop appropriate prescribed burning programs to minimize impacts to Black Rail and Seaside Sparrow.

Pelagic

-Work with mineral industry to minimize impact to foraging seabird concentration areas off of Cape Hatteras. Significant numbers of Red-throated Loon, Black-capped Petrel, and Bermuda Petrel utilize these waters.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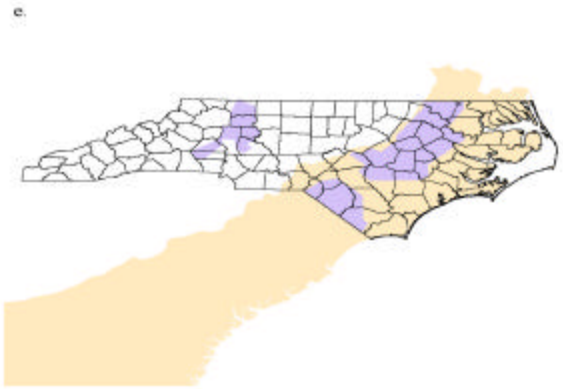

Figure 9. "All Bird" Focus Areas in North Carolina. a) waterbird; b) shorebird; c) landbird; d) waterfowl; e) Cooperative and Upland Habitat Restoration and Enhancement (CURE) focus area (Northern Bobwhite and other early successional/grassland bird species).

3. South Carolina

Waterfowl

Dabbling Ducks- objectives were developed using the Noffsinger method – energetics based calculation, 1.9% wintered in SC in 70's, 324,598 to overwinter, divers-75,000.

-Provide 100,000 acres (40,500ha) of coastal impoundments or productive habitat, currently 70,000 (28,350ha), need 30,000 additional acres (12,150ha).
-Provide habitat for 590,000 ducks in SC.
-Provide bottomland hardwood habitat for 240,000 Wood Ducks.

Waterbirds

-Increase acreage of managed wetlands.
-Expand Wood Stork and White Ibis rookeries by protecting bottomland hardwoods and swamps.
-Reduce number of Double-crested Cormorants to 1000 pairs.
-Reduce disturbance to colonies and rookeries.

-Provide usable nesting island every 30 miles, hurricanes can have significant impacts.
-Reduce disturbance by boaters and beach users to nesting areas and islands.
-Royal terns are currently declining, current goal is 18,000 pairs, currently have 3,000 pairs.
-Goal for Sandwich Terns is 2500 pairs.
- Goal for Gull-billed Tern is 500 pairs.

Shorebirds

-High priority species are American Oystercatcher and Wilson's Plover.
- Goal is 1000 nesting pairs of American Oystercatcher, at 400 now.
-Reduce disturbance from boat wakes and beach development.
-Objective of 800 pairs of Black-necked Stilt, up to 500 pairs now.
-Work to encourage Least Terns to nest in natural areas.
-Increase acreage of managed wetlands, and work with landowners to provide suitable habitat during fall migration through the South Carolina Shorebird Habitat Management Group.

Landbirds

-Goal is 300 pairs of Swallow-tailed Kites in the Wacamaw-Pee Dee region, Francis Marion National Forest, and Savannah River corridor, 120-150 pairs currently.
-Protect remaining maritime forest communities for Painted Bunting.
-Follow NBCI objectives to assist in providing habitat for Loggerhead Shrike, Barn Owl, and Painted Bunting, as well as Northern Bobwhite.
-Inventory habitat for Wayne's Black-throated Green Warbler, and protect remaining habitat.

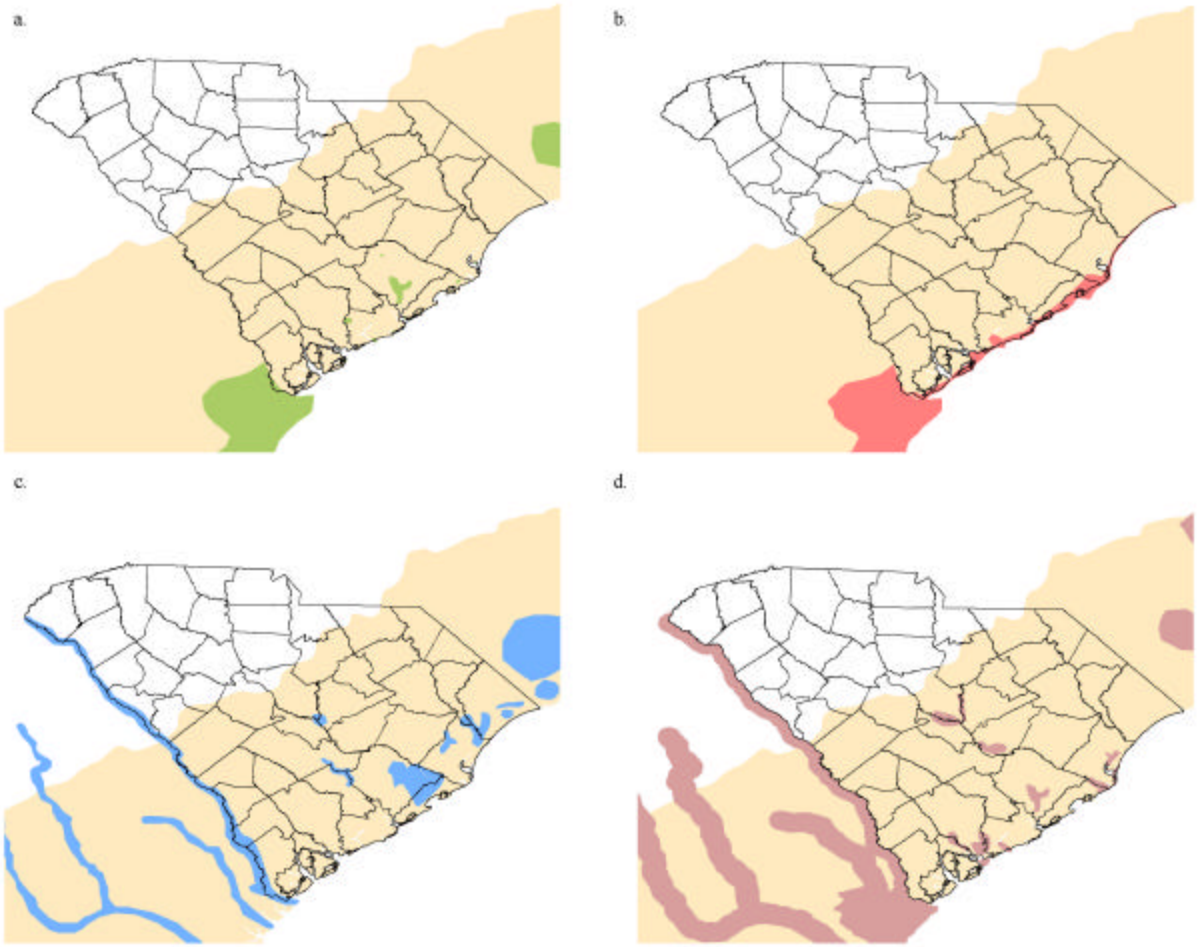

Figure 10. "All Bird" Focus Areas in South Carolina. a) waterbird; b) shorebird; c) landbird; d) waterfowl.

4. Georgia

Waterfowl

-Currently 6.2 million duck-use days/habitat protected
-Goal is to protect another 5 million duck-use days/habitat for a total of 11.2 million duck-use days

Waterbirds

The following are goal (pairs) for waterbirds in Georgia:

2,780 White Ibis
2,490 Great Egret
1,793 Tricolored Heron
882 Snowy Egret

180 Black-crowned Night Heron
174 Little Blue Heron
160 Great Blue Heron
8 Glossy Ibis
10,000 Royal Terns
500 Black Skimmers
300 Gull-billed Terns
600 Sandwich Terns
800 Least Terns in natural habitats
2000 Brown Pelicans
1500 Wood Storks

Shorebirds

The following are goals (pairs) for shorebirds in Georgia:

100 American Oystercatchers
200 Wilson's Plovers
300 Black-necked Stilts

-Increase acreage of managed impoundments.
-Maintain sandbar islands.
-Reestablish historical seabird nesting sites.
-Protect tips of barrier islands.
-Restore freshwater wetlands on barrier islands.

Landbirds

The following are goals (pairs) for high priority landbirds in Georgia:

300 Swallow-tailed Kites
25,000 Swainson's Warblers
35,000 Prothonotary Warblers
25,000 Bachman's Sparrows

-Protect 300,000 acres (121,500ha) in three patches of 100,000 acres (40,500ha) each, primarily for Swallow-tailed Kite in the Savannah River corridor and Altamaha River watershed.
-Protect another 500,000 acres (202,500ha) in 20 patches for Swainson's and Prothonotary Warbler.

Other

-Acquire lands along the Altamaha River watershed.
-Renovate impoundments in the Altamaha River area.
-Renovate impoundments on Sapelo Island.
-Hydrology restoration on Ossabaw Island.
-See NBCI for Northern Bobwhite objectives.
-Georgia has delineated Northern Bobwhite Focus Areas

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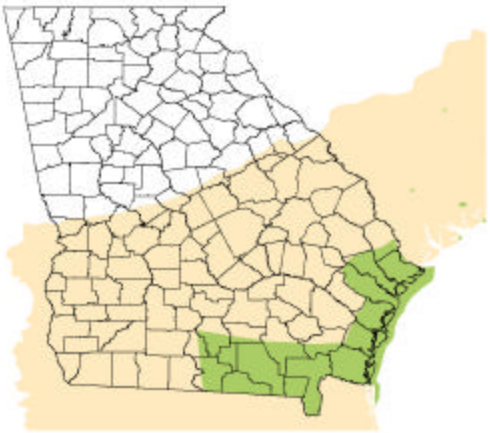

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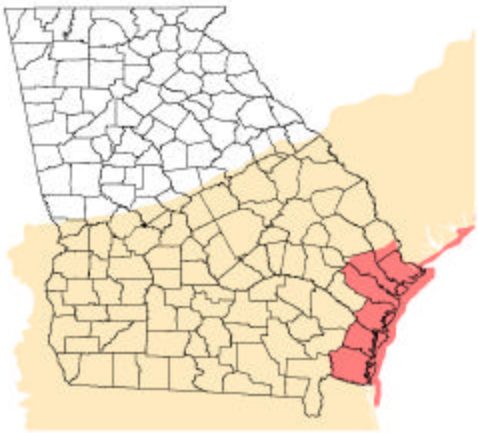

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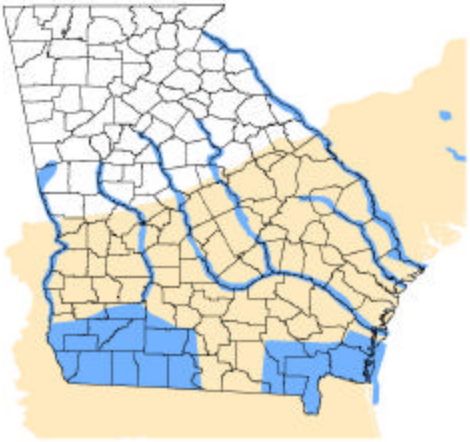

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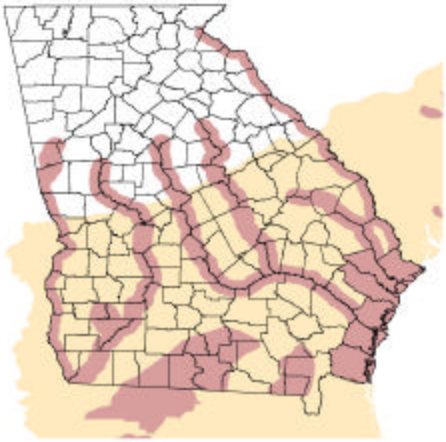


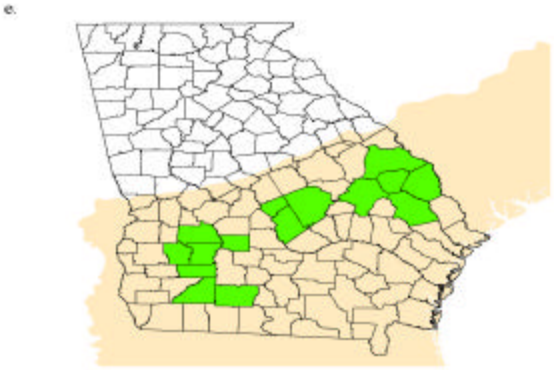


Figure 11. "All Bird" Focus Areas in Georgia. a) waterbird; b) shorebird; c) landbird; d) waterfowl; e) Northern Bobwhite and other early successional/grassland bird species.

5. Florida

Florida has not developed or stepped down any national or regional population or habitat objectives at this time. Florida will rely upon existing objectives outlined in existing bird conservation plans, and objectives defined in their State Comprehensive Wildlife Plan. Additionally, quantifiable objectives for the restoration of Northern Bobwhite habitat are outlined for Virginia in Table 6. However, Florida has provided some information relative to some of the bird groups.

Waterbirds

-Protect existing colonies and rookeries
-Protect nesting sites for Black Skimmer, Gull-billed Tern, Royal Tern, and Least Tern.

Shorebirds

-Protect American Oystercatcher breeding areas and staging areas in northeast Florida and along the barrier islands, and in the central panhandle of the state.
-Protect Snowy Plover areas in the central panhandle.
-Reduce disturbance of wintering shorebirds in all coastal areas.

Landbirds

In addition to the priority species listed in Table 1, Florida has added three species that are high priority in the SACP. These are Burrowing Owl (*Athene cunicularia*), Gray Kingbird (*Tyrannus dominicensis*), Yellow-breasted Chat (*Icteria virens*).

Pelagic

Florida has identified two pelagic focus areas (Figure 12). These regions are important to pelagic species in both summer and winter, including Common Loon (*Gavia immer*), Brown Pelican, Double-crested Cormorant, Magnificent Frigatebird (*Fregata magnificens*), Northern Gannet (*Morus bassanus*), Brown Booby (*Sula leucogaster*), Forster's Tern (*Sterna fosteri*), Caspian Tern (*Sterna caspia*), Royal Tern, Sandwich Tern, and Least Tern.

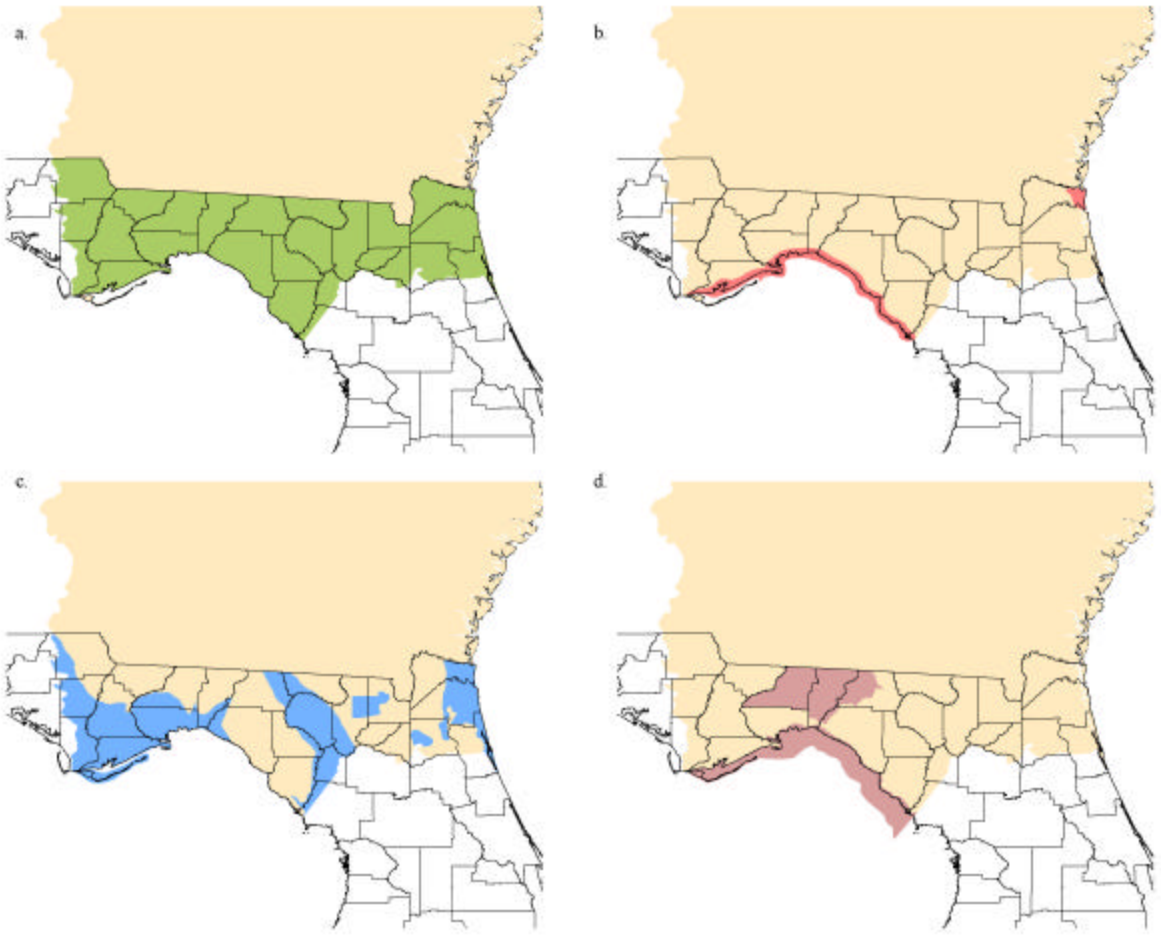


Figure 12. "All Bird" Focus Areas in Florida. a) waterbird; b) shorebird; c) landbird; d) waterfowl.

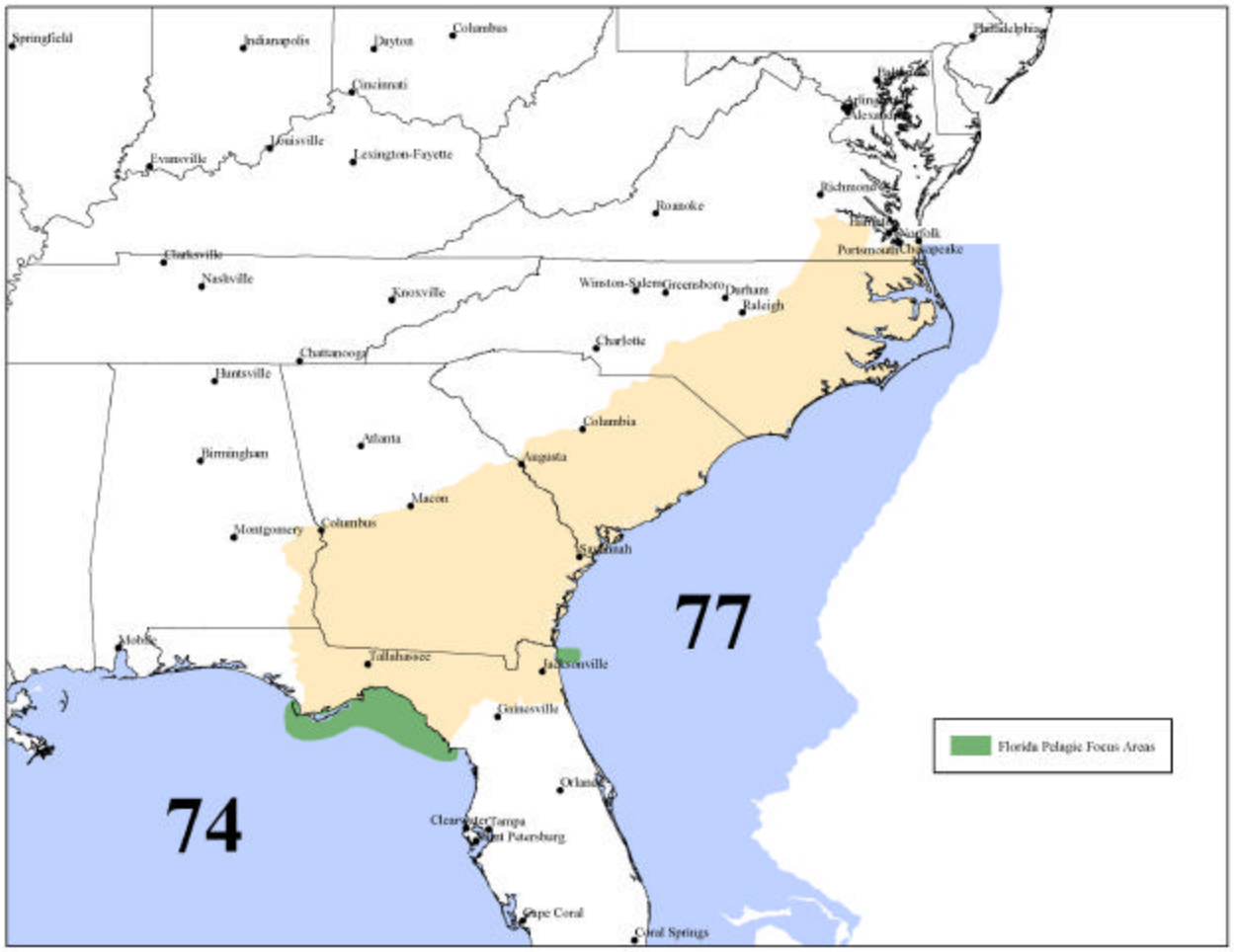


Figure 13. Pelagic Focus Areas in Florida (Green)

Convert to Native Warm Season Grass **Site Prep, Burn, Thin**

State	Pop. Goal Coveys	CRP Grass		Improvable Ag Land		CRP Pines		Southern Pines	
		Acres	Coveys	Acres[1]	Coveys	Acres	Coveys	Acres	Coveys
AL	**115,157**	190.6	**47,650**	203,788	**50,947**	288.4	**864**	5,231.9	**15,696**
FL	**44,688**	5.1	**1,275**	120,024	**30,006**	114.8	**345**	4,354.3	**13,062**
GA	**180,469**	18.0	**4,500**	613,960	**153,490**	482.3	**1,446**	7,010.9	**21,033**
KY	**23,203**	92.8	**23,203**	0	**0**	0	**0**	0	**0**
LA	**17,188**	6.1	**1,525**	54,048	**13,512**	6.8	**21**	709.9	**2,130**
MS	**188,204**	294.6	**73,650**	382,640	**95,660**	441.7	**1,326**	5,856.3	**17,568**
NC	**105,703**	4.8	**1,200**	378,364	**94,591**	13.0	**39**	3,291.2	**9,873**
SC	**70,469**	37.7	**9,425**	213,000	**53,250**	152.0	**456**	2,445.7	**7,338**
TN	**98,828**	282.8	**70,700**	109,620	**27,405**	27.1	**81**	213.7	**642**
VA	**15,469**	8.5	**2,125**	47,292	**11,823**	8.2	**24**	499.1	**1,497**
Total	**859,378**	941.0	**235,253**	2,122,736	**530,684**	1534.3	**4,602**	29,613.0	**88,839**

Table 6. Population goals (coveys to be added) and recommended management practices (acres x 1,000) by land use type for 10 states comprising BCR 27.

V. PELAGIC BIRD CONSERVATION

This section deals with conservation of pelagic and oceanic seabirds of the Southeast United States Continental Shelf and the waters of the Gulf of Mexico associated with the southeastern coastal plain encompassing much of the Southeast U.S. Continental Shelf (SECS, Pelagic BCR 77) and the near shore waters of the Gulf of Mexico (Pelagic BCR 74) (Figure 2). The waters addressed in this plan include all coastal offshore waters adjacent to the terrestrial portion of the SAMBI planning area in the Gulf of Mexico and waters of the Atlantic Ocean that extend to and beyond the Gulf Stream where high priority oceanic birds inhabit.

Eleven species of pelagic seabirds are highly imperiled, and 36 species of pelagic and coastal seabirds are of high conservation concern. For the two pelagic BCRs, nine species are highly imperiled or of high concern, (Table 4). Very little information has been developed relative to goals and objectives for the conservation of pelagic species for pelagic BCRs. However, issues, threats, factors leading to loss of habitat, conservation strategies, inventory and monitoring needs, research needs, and education and outreach needs have been suggested (Kushlan et al. 2002).

A. Ecology and Status

Waters within or near the Gulf Stream section paralleling the South Atlantic Coastal Plain constitute the open ocean portion of this planning effort. Additionally, those waters adjacent to the Gulf portion of the planning areas constitute the other open ocean portion of this planning effort. These open waters are the major feeding grounds for Black-capped Petrels. In addition, many other species of wholly or partially pelagic birds occur in large numbers as transients or non-breeding residents (e.g., Sooty Shearwater, Black-capped Petrel). Imminent threats at this time appear to be few except for the constant possibility of take from longline fisheries and from oils spills that can result in the death of many pelagic birds. Periodic resurgence of interest in exploration for oil deposits within the outer continental shelf, especially off the North Carolina coast, continues to be cause for concern.

B. Priority species, species suites, and habitat requirements

Black-capped and Bermuda Petrels. -- The Black-capped Petrel was thought to be very near extinction throughout much of the twentieth century. Numbers of birds may be as low as 2,000 and no more than 20,000 pairs (Wingate 1964), with known declines since Wingate's study (Lee and Vina 1993). All evidence at present indicates that waters in or adjacent to the Gulf Stream between north Florida and southern Virginia provide for the primary non-breeding range of Black-capped Petrels. Concentrations of birds can be found along the Gulf Stream in U.S. waters throughout the year, but particularly in May, August, and late December through early January. The main foraging area appears to be along the Gulf Stream directly east of Cape Hatteras National Seashore, North Carolina. However, some birds are found with regularity off the coasts of South Carolina and Georgia. Concentrations occurring during winter, when peak breeding activity is underway, is suggestive of breeding birds foraging along the Gulf Stream moving to and from breeding colonies (Lee 1987). These long-distance foraging bouts, if verified, would not be unreasonable for species of the Genus *Pterodroma*.

Breeding Black-capped Petrels are thought to be restricted to steep sea and inland cliffs along the La Selle Ridge in Hispaniola (mostly in Haiti). This species is almost certainly extirpated from all other previously known nesting areas (Lee and Vina 1993, Wingate 1964, Haney 1987, Lee 1979, Lee 1984). Because of the Haitian social-economic instability, as well as possible use of petrel adults and young for food, it is not unreasonable to assume further declines to the global populations and thus greater vulnerability of the species to extinction.

Gulf Stream waters may also provide foraging area for the Federally endangered Bermuda Petrel. This species was thought to be extinct for 300 years before its rediscovery in 1935. No more than 50 Bermuda Petrel pairs are known today, but this is a significant improvement over a few decades ago. Recent documentation (several sight records and photographs) provides evidence for previous notions that foraging areas from Bermuda include the Gulf Stream waters off of North Carolina (Wingate, pers. comm., Lee 1984; Lee 1987).

Potential threats to both Black-capped and Bermuda Petrels include human encroachment at breeding sites and offshore oil and gas exploration at Gulf Stream foraging sites. The biggest threat to both petrel species concerns lighted ships and platforms that attract birds at night, leading to collisions with wires or other structures. The documented presence of Bermuda Petrels would seem to require consideration of corrective lighting where conflicts are likely to occur. Increased mercury levels associated with oil spills also poses a potential threat. The Black-capped Petrel seems to be rather exceptional in its high levels of accumulated mercury (Whaling and Lee 1982). The source of mercury appears natural (through food, primarily squid), but effects from an additional increase of mercury through shipping spills or future oil exploration requires investigation.

Other Pelagic Species. -- Other priority species at least for monitoring attention include White-tailed Tropicbirds, Audubon's Shearwaters, and Federally threatened Roseate Terns. Caribbean populations of White-tailed Tropicbirds are at least regular in small numbers off the South Atlantic coast and are considered by some authorities as vulnerable where they breed (Lee, pers. comm.). Only 7,000 pairs persist within the West Indies (plus another 2,500 pairs in Bermuda). This number is low for seabirds, particularly for a regionally endemic subspecies. This subspecies appears stable at present, but is greatly reduced from former population levels. Caribbean populations of Audubon's Shearwaters appear to be more secure. Roseate Terns breeding from New York northward become highly pelagic offshore of the South Atlantic Coastal Plain when moving to and from the southern Caribbean Sea and northeastern South America.

C. Populations Issues

The major issues facing pelagic seabirds in offshore and nearshore waters are 1) conflicts with fisheries, 2) oil and hazardous materials, and 3) debris ingestion and entanglement. Population estimates, regional distribution, and seasonal distribution and abundance of seabirds is not well understood in the BCRs 74 and 77.

Conflicts with fisheries:

Marine fisheries exact a significant toll on ocean-feeding birds through incidentally catching and killing seabirds (bycatch). Long line, gillnets, and other fishing gear can prove fatal. Excessive bycatch of forage fish as well as fisheries using the same prey used by waterbirds can reduce the birds' food supplies. Trawls that affect the sea bottom alter the habitat on which the prey of seabirds and coastal waterbirds depend.

Oil and hazardous materials:

Oil is a major environmental threat to pelagic species, especially along major shipping transportation corridors. Oil may be released during platform construction, offshore drilling, and shipping and spillage. Waterbirds are commonly injured by oil spills, chronic oil discharge in bilge water, and hazardous materials releases. Additionally, lights on drilling structures may disorient, attract, or confuse some pelagic birds, resulting in injury or death.

Debris ingestion and entanglement:

Seabirds ingest materials and debris as a natural consequence of foraging. Ingesting plastics and other artificial flotsam can be detrimental. Additionally, seabirds are caught in discarded fishing line, nets, and other waste

D. Habitat Issues:

The major habitat issues facing seabirds are 1) loss of habitat, and 2) reduction in habitat.

1. Loss of Habitat

Seairds are congregatory throughout the year, and in non-nesting seasons they congregate at roosts and loafing areas. These sites require both protection and management to maintain their value to seabirds.

2. Degradation of habitat

Conflicts with fisheries, oil and hazardous material issues, and offshore pollution contribute to the degradation of foraging habitat for many pelagic species, particularly in shipping channels and areas heavily used by the marine fisheries industry.

Mass harvest of sargassum would affect forage prey base for pelagic species.

Harvest or overharvest of menhaden populations may affect forage prey base for pelagic seabirds.

E. Population and habitat objectives

Foraging gadfly (*Pterodroma*) petrels and other seabirds should be protected from contaminants (e.g., mercury and oil spills from ships, potential from future off-shore exploration drilling), longline fisheries (where known concentrations overlap heavily fished areas), and from collisions with night lights. In addition, work should begin on a range-wide conservation strategy for both gadfly petrels, Caribbean breeding White-

tailed Tropicbirds and Audubon's Shearwaters, and other South Atlantic Seabirds. Conservation plans would require international partnerships with Caribbean nations and Bermuda.

F. Implementation recommendations and opportunities/Evaluation of Assumptions

Effective strategies for Black-capped and Bermuda petrel conservation will require much survey and monitoring work at an international scale (Bermuda, Hispaniola, Southeast U. S., Lesser Antilles). The following items should be considered in conservation plans (from discussions among D. Lee, D. Wingate, and C. Hunter):

(1) Publishing an existing manuscript (monograph, Lee and Haney) on the Black-capped Petrel ($1,000);

(2) Conducting breeding population censusing on Haiti and Beata Island (Dominican Republic) and documenting human encroachment on colonies ($10,000 one year, but less with U.S. military help in Haiti and Dominican Republic help on Beata);

(3) Surveying at sea off the Southeast U.S. to fine tune distribution, especially where heavy ship traffic or potential for future oil exploration occurs ($35,000, 3 years);

(4) Increasing nesting habitat for Bermuda Petrels (artificial structures, $20,000, 3 years) and researching foraging and nesting biology of the species (radio telemetry, $30,000; nesting, $15,000, 1 year);

(5) Confirming lack of breeding of Black-capped Petrels in Lesser Antilles through a good international cooperative program ($30,000, 3 years) and determining foraging range around Lesser Antilles (sea survey, $5,000, one intense period);

(6) Conducting sea surveys in Sargasso Sea and around the Greater Antilles (free with military support);

(7) Conducting statistical analysis of 20+ year of data from the point-offshore drilling areas to determine what local oceanographic factors drive distribution and densities ($2,000-$5,000, perhaps with support from U.S. Minerals Management Service).

Total estimated expenses would run around $151,000 over a 3-4 year period. This price would be substantially less if the military can provide transportation assistance in Haiti, Beata Island, Greater Antilles, and the southeast U.S. coast.

A second priority project would be to follow through on all South Atlantic-Caribbean seabird connections such as outlined in the forthcoming publication, "Atlas of Breeding Seabirds of the West Indies -- an International Workshop." This workshop fulfills a desperate need for seabird conservation priorities throughout the West Indies and surrounding continental islands. Priorities would be generated locally, and through the

international workshop setting, would then be used to set regional priorities for the entire West Indies. Published workshop proceedings would be of both local and regional importance, as determined by West Indian conservationists, not "outsiders." Information would include taxonomy and identification of key nesting sites (present status and protective status), local problems (predators, lack of protective status), and local needs (inventory/monitoring, enforcement, education). Such a document could be used by organizations (e.g., Society of Caribbean Ornithology) as a lever for foundation funding to resolve problems as desired.

A third project that would require international cooperation is a "Housing Grant" for White-tailed Tropicbirds within the West Indies. While it is clear that tropicbirds cannot be restored to their former levels of abundance, the use of transportable artificial nesting structures can increase their numbers and even attract nesting tropicbirds to islands where they no longer nest. An additional advantage to this technique is that the structures can bring nesting tropicbirds into view of the more inhabited portions of the West Indies. Tropicbirds can serve as a "signature" species for tropical marine ecosystem conservation and awareness can foster public involvement in conservation strategies. The success of this effort depends on (1) fine-tuning an existing artificial burrow design, (2) using seed money to locally fund and implement multiple and simultaneous nest burrow construction (six countries have already expressed interest), and (3) expanding educational efforts as nesting burrows bring in tropicbirds. A fourth phase would include program evaluation as desired. The total budget for this expected 6-year program comes to $62,000 with no salaried time or overhead.

Along the South Atlantic Coastal beaches, research into the rates of and reasons for wintering Common Loon mortality should help provide for a better understanding of the risks to seabird populations in this area (T. Augsburger, USFWS, pers. comm.). Specifically, coastal gillnets are now suspected as a major cause of mortality for Red-throated Loons, which are heavily concentrated in North Carolina waters during winter, and many other pursuit diving seabirds (Forsell 1999). Better monitoring of beached birds, especially in North Carolina could help to develop better fishery regulations to eliminate this conflict and should be a high priority.

Also, the increasing popularity of pelagic birding (and whale-watching) boat trips is an important aspect of public outreach. Such trips help encourage conservation of offshore bird habitats through economic enrichment of local coastal communities. At least occasional pelagic trips originate from every state within the South Atlantic Coastal Plain physiographic area.

G. Conservation Strategies

- Seabird conservation efforts should develop partnerships with fishery industries and sport anglers.
- Impacts to seabirds from offshore and inshore fisheries and should be addressed in all future fishery plans.
- The policy of elimination of waterbird bycatch in fisheries should be embraced by all fisheries management entities.
- Oil effects on seabirds should be minimized through increased enforcement of shipping activities, safe operational procedures, spill clean up, and rehabilitation of oiled birds.

- Dumping of debris, line, and nets should be prohibited and strictly enforced.
- Non-persistent lined, nets, and traps should be developed.
- A state colonial waterbird coordinator should be appointed.

H. Inventory and Monitoring

- Death and morbidity of seabirds should be monitored wherever it occurs.
- Important foraging, migrating, and wintering seabird areas should be identified and monitored.
- Increase monitoring of seabird bycatch.
- Seasonal population estimates, distribution, and abundance of seabirds is needed in the SECS.

I. Research

- Role of commercial fisheries in seabird mortality.
- Determination population level effects of oil and hazardous materials on seabirds.
- Identify key marine habitats (done, needs to be written, Dave Lee)
- Value of sargassum to seabirds (done, needs to written, Dave Lee)
- Effects of sargassum harvest to seabird habitat and populations (done, needs to be written, Dave Lee)

J. Education and Outreach

"40" ideas for outreach (NACWP, 2002, page 38).

K. Potential Partnerships and Partners

The Waterbird Conservation Council
Waterbird Monitoring Partnership – Patuxent
Circumpolar Seabird Working Group
Waterbird Society
Society of Caribbean Ornithology
International Association of Fish & Wildlife Agencies (Shorebird and Waterbird Working Group)
National Marine Fisheries Service
National Oceanic and Atmoshperic Administration
South Atlantic Migratory Bird Initiative (SAMBI) partners
National Audubon Society
Region 4 U.S. Fish & Wildlife Service, Seabird Working Group
South Carolina Department of Natural Resources
South Atlantic Fisheries Management Council
North Carolina State Museum
American Bird Conservancy

Table 4. Important Species in BCR 74 and 77

Species	Status/Ranking
Roseate Tern	H
Audubon's Shearwater	H
Bermuda Petrel	H
Black-Capped Petrel	H
Bridled Tern	HC
Cory's Shearwater	M
Greater Shearwater	HC
Leach's Storm Petrel	M
Long-Tailed Jaeger	M
Manx Shearwater	HC
Northern Gannet	H
Parasitic Jaeger	L
Pomarine Jaeger	L
Sooty Shearwater	H
Sooty Tern	M
South Polar Skua	N
White-Tailed Tropicbird	HC
Wilson's Storm Petrel	L
Common Loon	*
Red-Throated Loon	*

Y=yet to be ranked; H=highly imperiled; HC=high concern; M=moderate concern; L=low concern; R=regional interest; N=no concern; *added due to inshore bycatch

VI. STRATEGIES TO ACHIEVE GOALS AND OBJECTIVES

A. Landscape/Regional Conservation

1) Important Bird Areas (IBA's)

The Important Bird Areas (IBA) Program began in Europe in 1985 with Birdlife International. The IBA program has been implemented in the U.S. by two groups, the National Audubon Society and the American Bird Conservancy. The programs differ by organization and within each organization are implemented at the state level. These IBA programs are designed to identify sites of high importance for bird life. This designation places no restrictions on a site and does not entail any regulatory measures it simply recognizes sites of significance.

An Important Bird Area can be defined as a site that has been documented to support significant populations of particular species or a significant diversity of species. Being designated an Important Bird Area usually signifies an area that is managed and maintained for the benefit of ecological health and diversity. Although this is frequently the case, it is not always the standard, birds may frequent places that are not protected or managed for conservation purposes. Often the public confuses the IBA program as being an instrument for choosing good birding sites. The sites are not chosen for their

worthiness as public birding places but for their species conservation value, which may result in many places being designated that are not available to the average birder.

It is important to note that the two Important Bird Area programs have the same origin but have developed into separate and unique programs within each agency. The National Audubon Society and the American Bird Conservancy each have distinct qualities they are looking for in a potential IBA site. Within each state, some sites may be on both IBA lists while some states may have radically different IBA site listings.

Within the context of the SAMBI Plan, IBAs can be seen as a useful tool for identifying potential target sites for protection. The IBA designation has a certain public value that may aids in the mobilization of resources for the conservation of bird species. It also signifies areas, particularly state or federal lands, where land managers have achieved conservation success. Within the SAMBI planning area boundary there are currently 143 National Audubon Society Important Bird Areas and 32 American Bird Conservancy IBA sites.

Table 5. Important Bird Areas of the National Audubon Society and the American Bird Conservancy by State

NAME	NAS	ABC	MAPPED
Virginia			
Great Dismal Swamp NWR	x	x	Y
Piney Grove Preserve	x	x	Y
North Carolina			
Alligator River NWR	x	x	Y
Bald Head/Smith Is.	x		Y
Battery Island	x		Y
Beacon island	x		Y
Big Foot Island	x		Y
Big Swan Island	x		Y
Caper Hatteras NS	x	x	Y
Cape Lookout NS	x	x	Y
Cat Island	x		Y
Cedar Island Marshes	x		Y
Chainshot Island	x		Y
Chowan River Bottomlands	x		Y
Clam Shoal	x		Y
Croatan NF	x	x	Y
DOT Island	x		Y
Dunahoe Bay	x		Y
Eagle Island	x		Y
Ferry Slip Island	x		Y
Fort Bragg/ Sandhills West		x	Y
Great Dismal Swamp	x	x	Y
Great Island	x		Y
Green Swamp	x		Y
Gulf Island	x		Y
Henslow's Fields	x		Y

Hobucken Marshes	x		Y
Hog Island	x		Y
Holly Shelter-Angola Bay	x		Y
Old House Channel, Island C	x		Y
Roanoke Sound, Island G	x		Y
Old House Channel, Island L	x		Y
Old House Channel, Island MN	x		Y
Judith Island Point	x		Y
Lake Mattamuskeet/ Swanquarter NWR	x	x	Y
Lea-Hutaff Island	x		Y
Lumber River Bottomlands	x		Y
Mackay Island NWR	x		Y
Masonboro Island	x		Y
Middle Marshes	x		Y
Monkey Island	x		Y
Morgan Island	x		Y
Nags Head Woods	x	x	N
Upper Neuse River Bottomlands	x		Y
Lower Neuse River Bottomlands	x		Y
New Dump Island	x		Y
New Stump Point	x		Y
North Pelican Island	x		Y
North River Bottomlands	x		Y
North Rock Island	x		Y
Old DOT Island	x		Y
Onslow Bay	x		Y
Oregon Inlet Shoals	x		Y
Outer Banks, Inshore Ocean	x		Y
Outer Continental Shelf, CH	x	x	N
Outer Green Island	x		Y
Palmetto-Peartree Reserve	x		Y
Pea Island NWR	x	x	Y
Pine Island/Currictuck Marshes	x		Y
Pocosin Lakes/Pungo NWR	x	x	Y
Racoon Island	x		Y
Carrot Island-Bird Shoal	x		Y
Rawls Island	x		Y
Roanoke River Bottomlands	x	x	Y
Roanoke NWR		x	N
Roos Point	x		Y
Sand Bag Island	x		Y
Sandhills East	x		Y
Sandhills West	x		Y
Sheep Island	x		Y
South Pelican Island	x		Y
Striking Island	x		Y
Town Creek Bottomlands	x		Y
Bird Island-Twin Lakes	x		Y
Waccamaw River Bottomlands	x		Y

Wainwright Island	x		Y
West Bank of the Cape Fear	x		Y
Georgia			
Altamaha WMA	x		Y
Altamaha River Delta	x	x	N
Andrews Island	x		N
Augusta Levee	x		N
Big Duke's Pond	x		Y
Big Hammock WMA	x		Y
Blackwater Plantation	x		N
Bond Swamp NWR	x		Y
Bullard Creek WMA	x		Y
Cumberland Island	x	x	Y
Cypress Lake Plantation	x		N
Eufala NWR	x		Y
Fort Benning	x	x	Y
Fort Stewart	x	x	Y
Garden Lakes	x		N
Grand Bay/Banks Lake	x		Y
Harris Neck NWR	x		Y
Jekyll Island	x		Y
Joe Kurz WMA	x		Y
King's Bay Naval Station	x		Y
Lake Seminole WMA	x		Y
Little Tybee Island	x		Y
Okefenokee Swamp	x	x	Y
Ossabaw Island	x		Y
Paradise Public Fishing Area	x		Y
Phinizy Swamp	x		N
Savannah NWR	x		Y
Southlands Forest	x		N
St. Catherine's Island	x		Y
Swamp of TOA	x		N
Wassaw Island NWR	x		Y
Yuchi WMA	x		Y
Florida			
Apalachicola & Tates Hell For.	x	x	Y
Alachua Lakes	x		N
Big Bend Ecosystem	x		Y
Camp Blanding-Jennings	x		Y
Dog Island-Lanark Reef	x	x	N
Duval & Nassau Tidal Marshes	x		N
Fort George and Talbot Islands	x		Y
Greater Apalachicola Bay	x		Y
Guana River	x		Y
Hugenot Park-Nassau Sound	x		Y
Lake Lafayette	x		N
Ichetucknee Springs State Pk.	x		Y
Kanapaha Prairie	x		Y

Lake Disston	x		N
North Atlantic Migrant Stopover	x		N
Osceola NF-Okee. and Pinhook	x	x	Y
Red Hills Ecosystem	x		N
St. Marks NWR	x	x	Y
Wakulla Springs	x		Y
South Carolina			
Brosnan Forest	x		Y
Cape Romain NWR	x	x	Y
Congaree Swamp National Pk.	x	x	Y
Donnelley WMA	x		Y
Francis Beidler Forest	x	x	Y
Francis Marion NF	x	x	Y
Pinckney Island NWR	x		Y
Sandy Island	x		Y
Santee Coastal Reserve/Washo		x	Y
Savannah NWR	x		Y
Sea Pines Forest Preserve	x		Y
Silver Bluff	x		Y
Webb Wildlife Center	x		Y
Westvaco's Central Area	x		N
ACE Basin NWR	x	x	Y
Yawkey Wildlife Center	x	x	Y
Hobcaw Barony	x		Y
Bear Island WMA	x	x	Y
Dungannon Pltn. Heritage Pres.	x		Y
Crab Bank	x		Y
Deveaux Bank	x		Y

Source: Important Bird Areas listed were gathered from state representatives of Audubon and American Bird Conservancy's IBA programs. Some states had lists available on their websites (American Bird Conservancy: www.abcbirds.org and National Audubon Society: www.Audubon.org). Lists are updated frequently so for complete accuracy please check with the state components of each organization.

Note: Some areas are not mapped due to unavailability of data, and IBA's that fall outside of SAMBI's planning area are not included.

The following maps (Figures 14-18) were created to demonstrate the location of protected lands and IBA sites for each state. Depending upon availability of data, certain sites may not appear on their respective state maps. Accuracy of the protected lands data is variable.

Figure 14: Important Bird Areas of the National Audubon Society (NAS) and the American Bird Conservancy (ABC) within the Florida Planning Region of the South Atlantic Migratory Bird Implementation Plan (McWilliams, 2004)

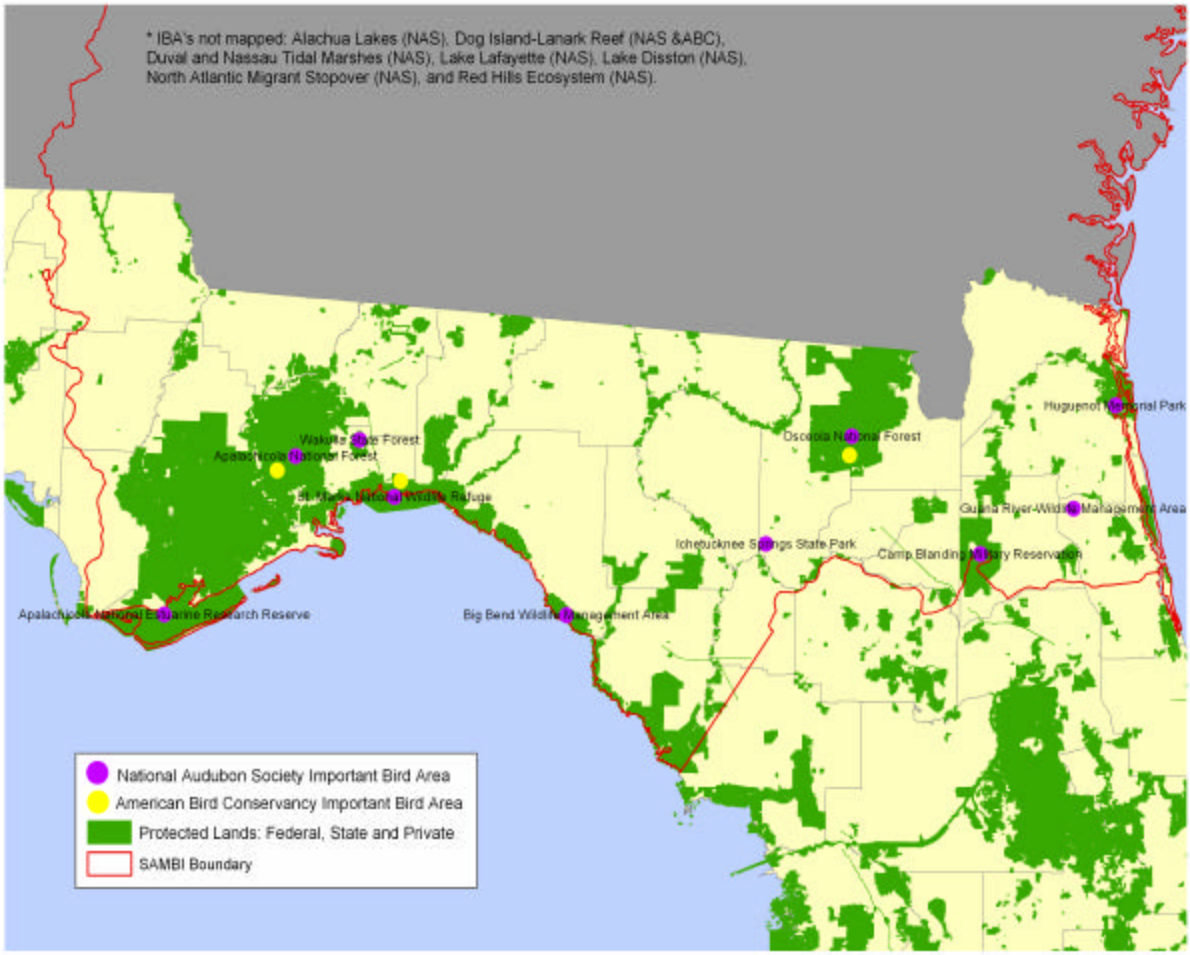


Figure 15. Important Bird Areas of the National Audubon Society (NAS) and the American Bird Conservancy (ABC) within the Georgia Planning Region of the South Atlantic Migratory Bird Implementation Plan (McWilliams, 2004)

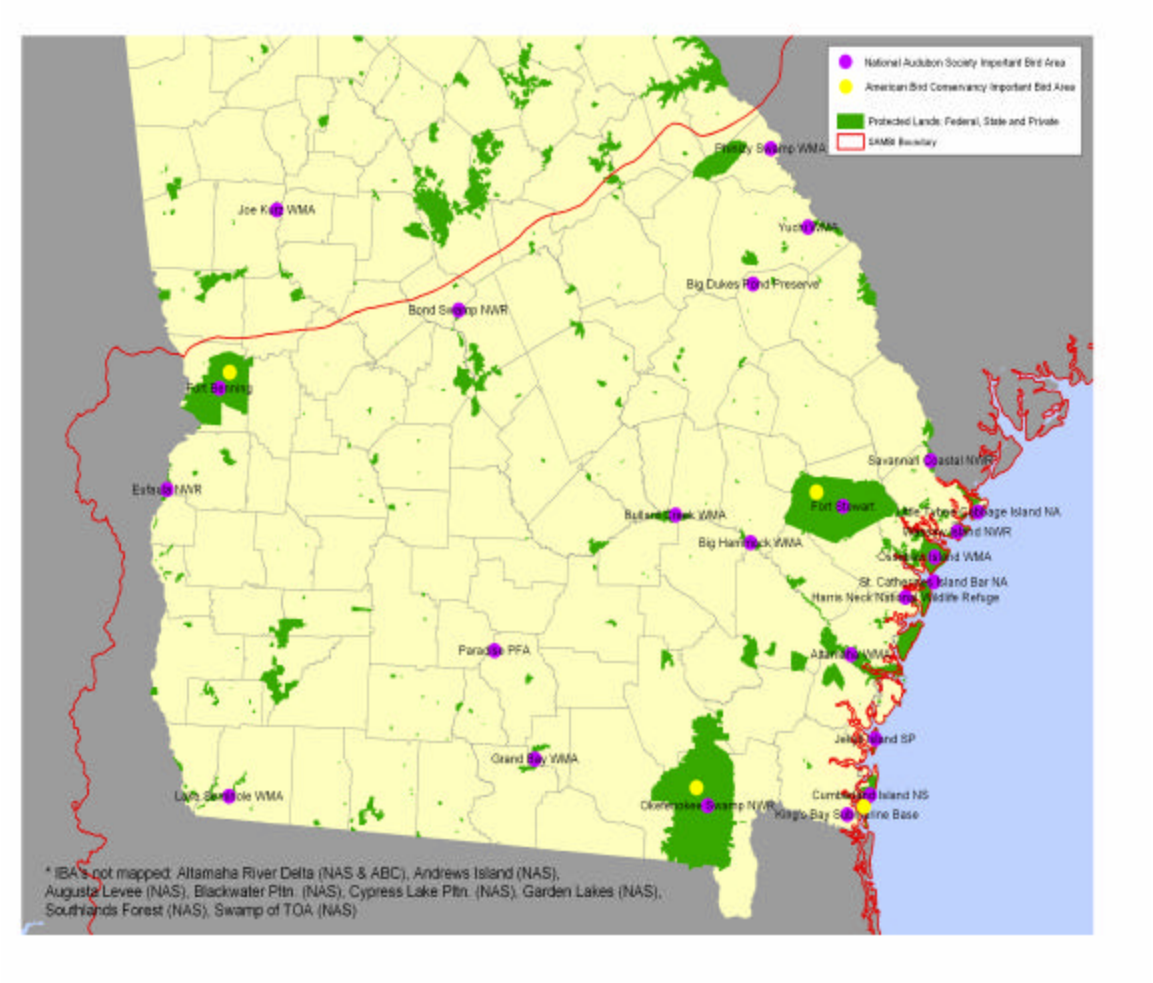


Figure 16. Important Bird Areas of the National Audubon Society (NAS) and the American Bird Conservancy (ABC) within the South Carolina Planning Region of the South Atlantic Migratory Bird Implementation Plan (McWilliams, 2004)

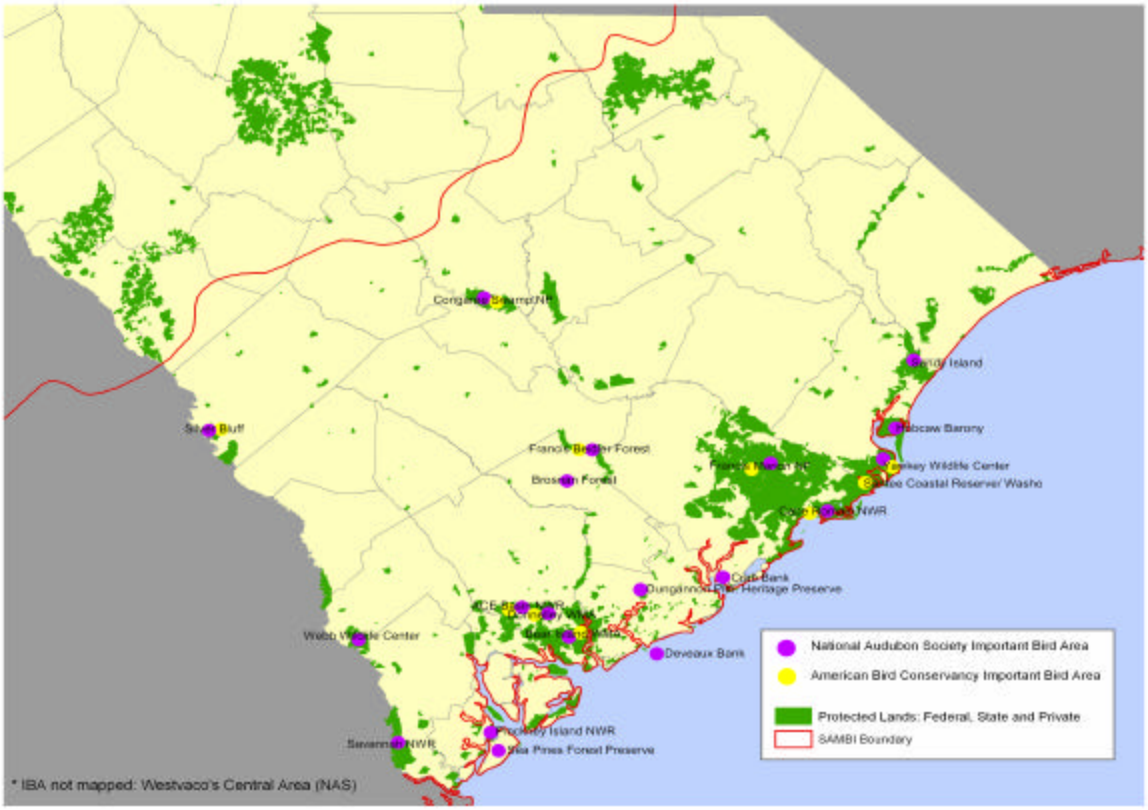


Figure 17. Important Bird Areas of the National Audubon Society (NAS) and the American Bird Conservancy (ABC) within the North Carolina Planning Region of the South Atlantic Migratory Bird Implementation Plan (McWilliams, 2004)

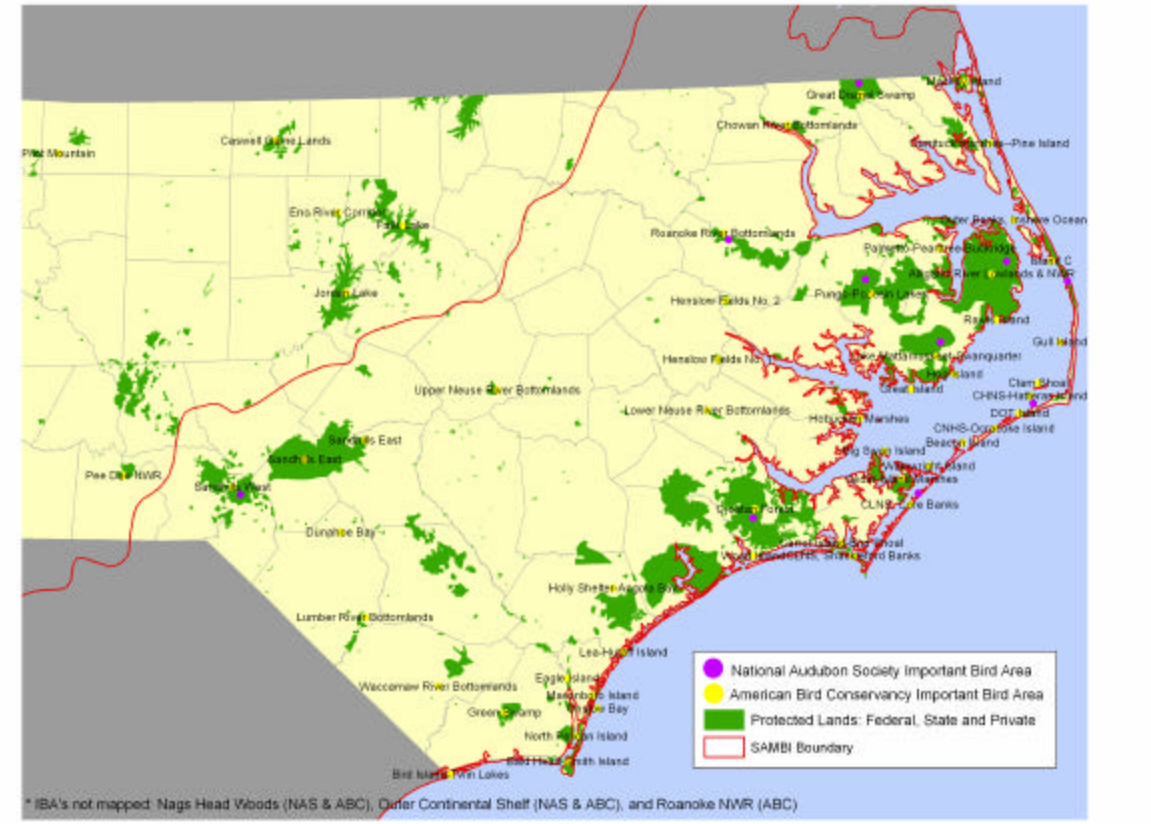
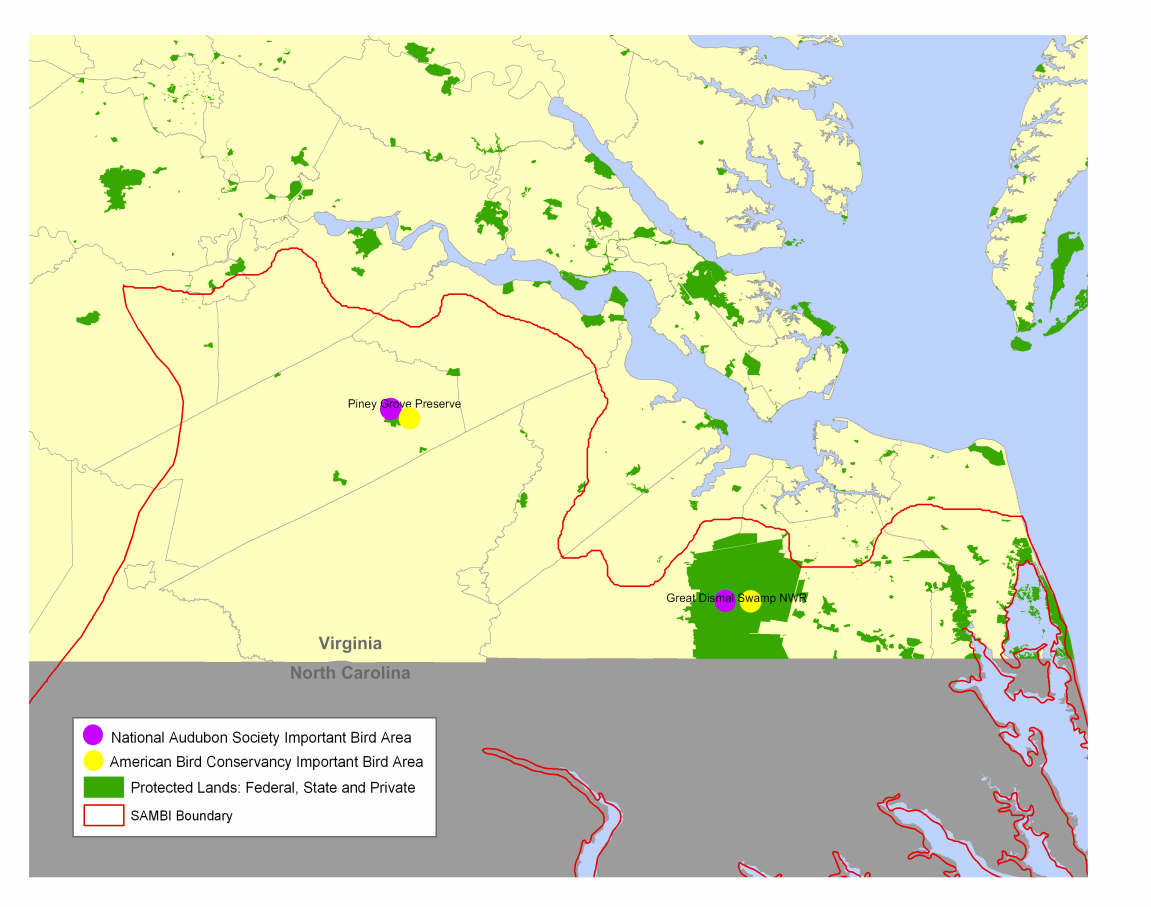


Figure 18. Important Bird Areas of the National Audubon Society (NAS) and the American Bird Conservancy (ABC) within the Virginia Planning Region of the South Atlantic Migratory Bird Implementation Plan (McWilliams, 2004)



2) Protected Lands Coverage

Lands that are in public ownership (primarily federal and state), lands protected through non-governmental agencies, and private lands protected through conservation easements have been mapped for each state for the SAMBI planning region. Below is an example of this data layer for the five states within SAMBI. This coverage can be broken out by state, and be used by SWGs to help direct conservation efforts.

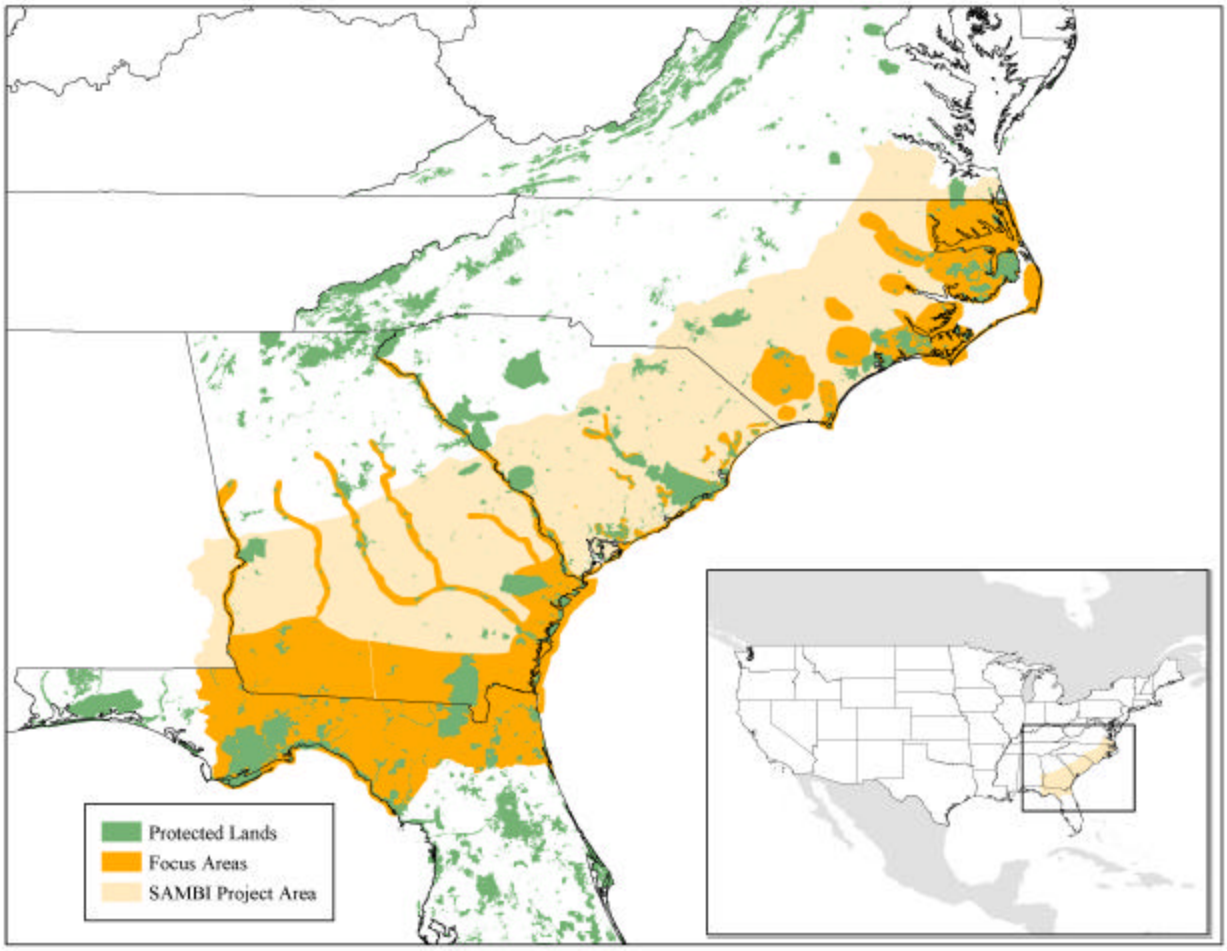
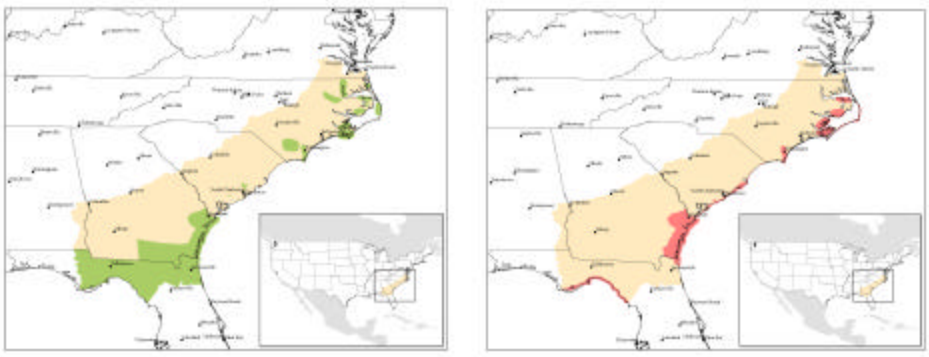


Figure 19. Protected Lands Coverage and "All Bird" Focus Areas

3) Focus Areas

Focus areas for waterbirds, shorebirds, landbird, and waterfowl have been delineated for each state within the SAMBI area. These composite maps can be used with protected land coverage to help SWGs direct their conservation efforts.



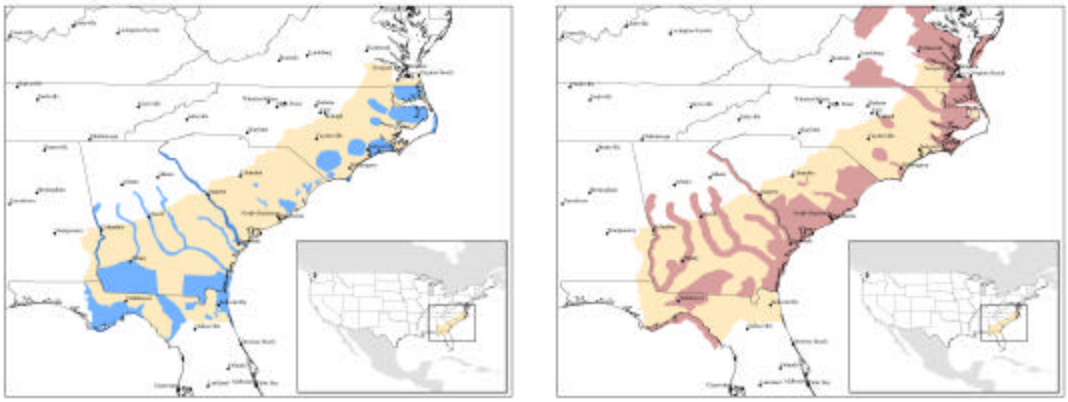


Figure 20. "All Bird" Focus Areas for SAMBI; clockwise from top left: waterbirds, shorebirds, landbirds, waterfowl.

4) Land Cover Maps

A land cover map is available and has been previously presented (Figure 7). Land cover maps are also available for each state, and below is an example from Florida.

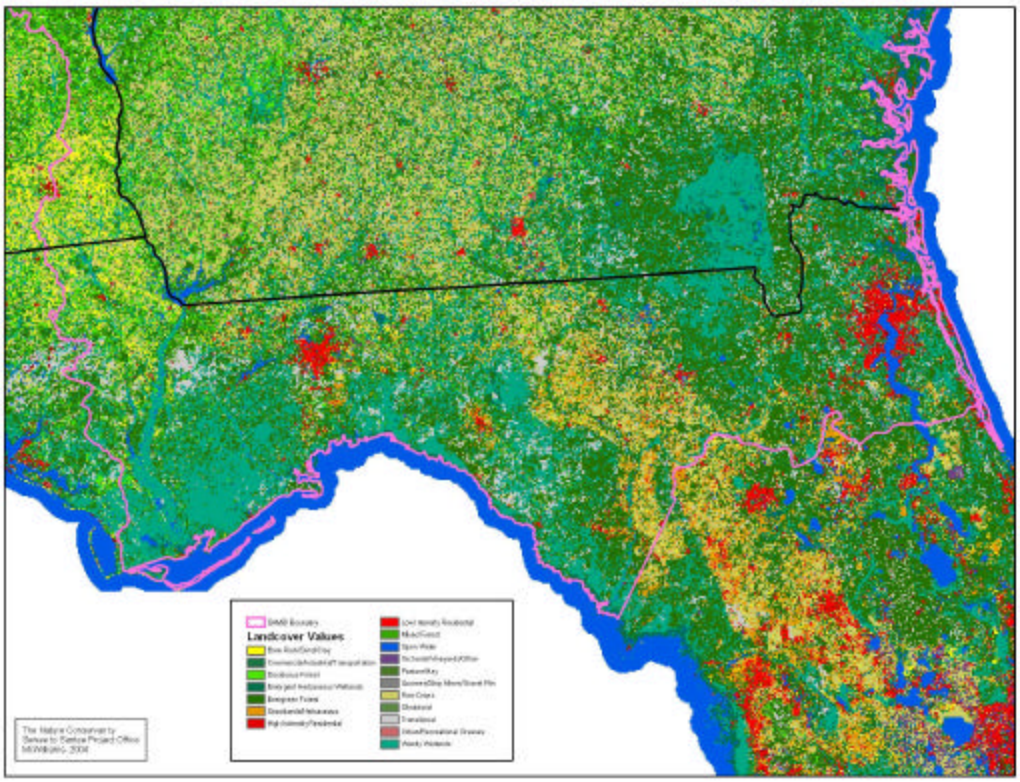


Figure 22. Land Cover Map of Florida.

5) Where to Implement Conservation

Utilizing land cover maps, locations of protected lands, locations of IBAs, and the individual focus areas for each bird group in each state, SWGs can begin to develop strategies for conservation within their state. All of these maps (protected lands, IBAs, land cover, focus areas) can be manipulated at the regional, state, or local level to help direct conservation at the local, regional, and national level.

B. Conservation Principles

- To prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds.
- To restore and enhance the habitat of migratory birds.
- To integrate conservation principles, measures and practices into all partner activities and policy development.
- To avoid or minimize adverse impacts on migratory bird resources when conducting agency actions.
- Work closely with beach managers and communities (to include sea turtle monitoring crews) and educate them on ways to minimize plover nest disturbance and to avoid running over plover chicks where use of vehicles are allowed on beaches.
-Provide specific guidance for both private and public land managers to slow the timing of spring draw-downs and build in habitat recommendations involving teal considerations in autumn to closely match peak shorebird habitat needs in their respective areas.
-Provide proper incentives for private cooperating landowners to delay planting for about a month.
- When it is necessary to conduct beach re-nourishment projects, work with communities, State and Federal agencies, on the timing and design of the project to minimize disturbance and impacts on shorebird food base.
-Assess individual managers' current contribution as well as their capacities to help achieve habitat objectives outlined in this report, to include the potential to close beaches where excessive public use is shown to be detrimental to important nesting habitat.
-Work with appropriate fishery councils and organizations to reduce, or if necessary to eliminate, fisheries harvesting horseshoe crabs either directly or through by-catch.
-Work with all interested parties to improve freshwater inputs, in terms of both flows and quality, into estuarine systems.

C. Conservation Strategies

Needs Work

D. Funding Sources – Needs Work

Conservation funding is available through multiple sources and as a multi-agency organization the SAMBI partners are in a position to vie for resources of all types. Partnerships should be used to their maximum advantage to seek out funding sources and often funding is contingent upon the existence of well-founded partnerships.

1. The North American Wetlands Conservation Act

One of the most important funding sources available for land managers today is the North American Wetlands Conservation Act (NAWCA). The partners of the NAWMP played a role in the 1989 passage of the North American Wetlands Conservation Act (NAWCA). The NAWCA, operated by the U.S. Fish and Wildlife Service's Division of Bird Habitat Conservation, provides matching grants to private organizations, public organizations, or individuals who have developed wetlands conservation projects that require partnerships and are within the United States, Canada, or Mexico. NAWCA allows for a secure foundation of long-term funding support for conservation projects to be implemented in the wetlands and associated uplands that many birds depend upon. It also furthers the ability for the three NAWMP signatories, United Sates, Canada, and Mexico, to coordinate projects on a grand scale. NAWCA is a tremendous resource and has supported over 1,300 partners.

2. National Coastal Wetlands Conservation Grant Program

3. Neotropical Migratory Bird Conservation Act

E. Conservation/ Protection Agencies/ Organizations

1. Major Partners

U.S. Fish & Wildlife Service
USDA Forest Service
National Park Service
The Nature Conservancy
Ducks Unlimited, Inc.
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
South Carolina Department of Natural Resources
North Carolina Wildlife Resources Commission
Virginia Department of Game and Inland Fisheries

There are also numerous entities that are dedicated to pelagic bird conservation (see Pelagic Bird Conservation section).

Additionally, there are other many other federal, state, and non-governmental, and private entities and agencies whose primary mission is bird conservation, whether it is planning, implementation, evaluation, research, or outreach and education. All of these existing and potential partners should be involved in this planning effort, particularly at the State Working Group level.

Finally, there are hundreds of partners that have been involved with implementation of SAMBI habitat conservation, and all of the above groups should be within the network of communication of SAMBI.

2. Local Initiatives

Additionally, there are many state and local initiatives that are extremely important in local conservation efforts, and these groups should be incorporated into the SAMBI network as well. Some examples of such initiatives are: Needs Work

VII. RESEARCH NEEDS - Needs Work

A. Multiple Bird Needs
B. Waterbirds
C. Shorebirds
D. Waterfowl
E. Land Birds
F. Northern Bobwhite
G. Woodcock?
H. Mourning Dove?
I. Turkey?

VIII. MONITORING AND EVALUATION

- Death and morbidity of migratory birds should be reported and monitored wherever it occurs.
- Important foraging, migrating, and wintering areas should be identified and monitored continually.
- Increase monitoring in high-threat areas within SAMBI focus areas.
- Develop system for the continual monitoring and evaluation of priority population and habitats for the species identified within the Plan.
- Seasonal population, distribution, and abundance estimates are needed.

-NEEDS MUCH MORE WORK

X. ORGANIZATION AND RESPONSIBILITIES

Efficient and successful delivery of bird conservation objectives requires a broad diversity of interested partners, a shared vision of the Plan's goals, a willingness to employ time, energy, money and staff resources to the project, an understanding of each partner's situation and responsibilities to the Initiative, as well as a commitment to the on-going coordination of the Plan.

Partners are responsible for the following tasks:

1. Prioritizing and biological planning for bird conservation activities.
2. The development and implementation of projects.
3. Communications and outreach between Initiative partners and general public.
4. Fund-raising for bird conservation projects and activities.

Atlantic Coast Joint Venture, SAMBI and State Working Groups

The Atlantic Coast Joint Venture is a partnership focused on the conservation of habitat for native birds in the Atlantic Flyway of the United States from Maine south to Puerto Rico. The joint venture is based on the principles of a strong biological foundation, a landscape approach to conservation, and a strong and diverse partnership. The joint venture is a partnership of the 18 states and commonwealths and key federal and regional habitat conservation agencies and organizations in the joint venture area. The joint venture was originally formed as a regional partnership focused on the conservation of waterfowl and wetlands under the North American Waterfowl Management Plan in 1988 and has since broadened its focus to the conservation of habitats for all birds consistent with major national and continental bird conservation plans and the North American Bird Conservation Initiative.

At the same time as the North American Waterfowl Management Plan was being implemented, other aspects of bird conservation were evolving and expanding with the completion or maturation of three other continental or national plans – Partners in Flight, U.S. Shorebird Conservation Plan, and North American Waterbird Conservation Plan as well as a number of national or continental game bird initiatives (e.g. Northern Bobwhite Conservation Initiative, Woodcock Conservation Plan). The North American Bird Conservation Initiative (NABCI) evolved in the late 1990s as an effort to integrate among these bird plans. The vision of NABCI is "populations and habitats of North America's birds are protected, restored, and enhanced through coordinated efforts at international, national, regional, state, and local levels, guided by sound science and effective management." The partners associated with these plans and with NABCI have looked to joint ventures as a major way to deliver habitat conservation outlined under the plans. As stated in the NABCI goal: "To deliver the full spectrum of bird conservation through regionally based, biologically driven, landscape-oriented partnerships." In response to these changes, the Atlantic Coast Joint Venture mission evolved from habitat conservation for waterfowl and wetland-associated species to the conservation of habitats for all birds in the joint venture area - this new and expanded mission was endorsed by the Management Board in 1999.

As part of the expanded mission was the consideration of a new geographic language for integrating among bird conservation initiatives in physiographic regions containing similar habitats– the Bird Conservation Regions (BCRs) adopted by NABCI. Joint venture staff and partners are taking a lead role in planning in these BCRs. There are eight Bird Conservation Regions partially or wholly within the Atlantic Coast Joint Venture. The South Atlantic Migratory Bird Initiative (SAMBI) was the first such effort undertaken by staff in the ACJV.

The SAMBI is composed of five primary Management Board members from the five states involved in the initiative, and there are numerous technical personnel within each state federal, state, non-governmental organizations or private individuals, that are responsible for the science and biology of this planning effort. These groups are referred to as State Working Groups and are described in a previous section. Partners are responsible for working within the framework of the SAMBI Plan to accomplish common conservation goals for the protection of migratory birds. The framework allows for local and single-species initiatives as well as large-scale protection projects across

multiple landscapes affecting multiple species. The State Working Groups are formed by partners interested in achieving the goals and objectives outlined within this Plan for their particular state, and coordinating with other SWGs. Technical personnel for the entire effort are interchangeably referred to as the BCR Technical Committee or SAMBI Technical Committee, and members of SWGs are included in this larger group.

IX. ACCOMPLISHMENTS

The SAMBI Plan's success extends beyond the projects that have been completed within its region, to all the projects that SAMBI has influenced by creating a model for "all bird" conservation. SAMBI's accomplishments defy quantitative assessment, as they extend beyond the projects launched by SAMBI planners to any projects that have been influenced or stimulated by the Initiative as a model for "all bird" conservation. Success and accomplishments, in this case, are measured by overall progress towards effective bird conservation for all birds under the framework of NABCI. Although the projects that have been initiated by SAMBI's planners alone, stand as a testament to the effectiveness of a regionally-based "all bird" conservation initiative, SAMBI's accomplishments are better measured qualitatively by the strength of the alliances and partners, the ability to remain congruent with other bird planning efforts, and over the overall advancement of the integrated bird conservation.

A. Project Accomplishments

Over all, more than 60 projects have been funded with more than $20 million awarded, with partners providing over $80 million in matching funds. The projects have resulted in over 50,000ha being conserved and protected for all birds within the SAMBI area. SAMBI has well over 200 Contributing Cash Partners, proof of the effective alliances created under SAMBI. Each grant or project was acquired under either the North American Wetlands Conservation Act (Regular Grants and Small Grants), National Coastal Wetlands Conservation Grant Program, or the Neotropical Migratory Bird Conservation Act.

The first project, under Regular Grants, was the first "all bird" project under the framework of NABCI by the Atlantic Coast Joint Venture. The SAMBI Habitat Conservation Project, which included North Carolina, South Carolina and Georgia, was a synthesis of 11 projects with 8 partners. The three primary objectives of this project were to 1) restore and manage forested wetlands, including pocosins and Carolina Bays, 2) protect, restore, and manage beach, dune, and intertidal habitats, and 3) emphasize year-round management of managed wetlands for shorebirds, waterfowl, and waterbirds. The project conserved 3,411ha of habitat and its success stimulated the submission of many "all bird" projects in the SAMBI area.

B. Planning Accomplishments

SAMBI is the first integrated conservation planning effort under the framework of the NABCI, lying within NABCI's BCR 27 of the Southeastern Coastal Plain, coordinated by the NAWMP's Atlantic Coast Joint Venture. SAMBI has been written and implemented with the intent of coordinating a merged comprehensive implementation plan with the East Gulf Coastal Plain Joint Venture, forming an implementation plan for

all of BCR 27 (Figure 7). As the first of its kind in all-bird conservation planning, SAMBI is being used as a model for other regional planning efforts at the BCR level in the ACJV as well as in North America. Some organizations, such as the International Association of Fish and Wildlife Agencies, even use components of SAMBI as a template for their own "all bird" workshops.

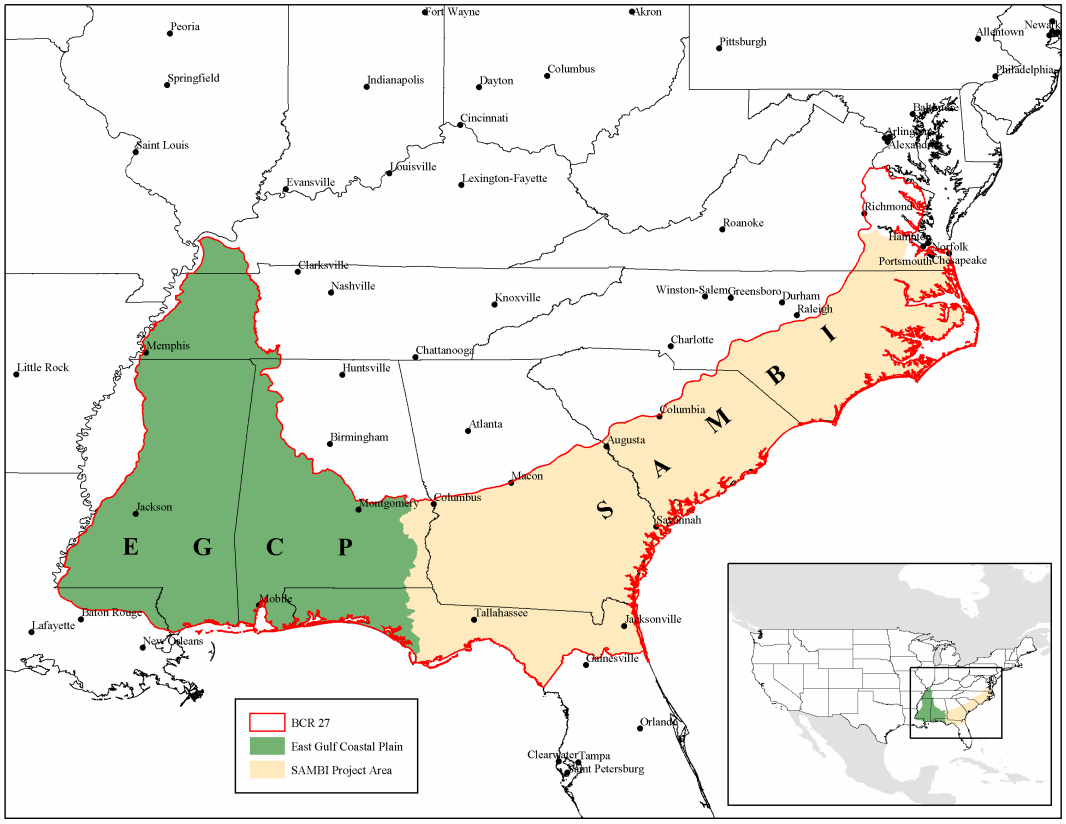


Figure 21. BCR 27 (SAMBI Planning Area and East Gulf Coastal Plain)

A website has been developed for SAMBI by the Wildlife Habitat Management Office in Manteo, NC (http://samigbird.fws.gov/). The website serves as a valuable tool for land managers and all SAMBI participants as it provides a data entry site for waterfowl, shorebird, and marsh bird surveys, as well as displaying acres managed and shorebird numbers in real time from Florida through North Carolina. This effort is now being coordinated with states from Virgina to Maine, providing a comprehensive real time picture of waterfowl and shorebird populations and habitats being managed in the Atlantic Flyway.

SAMBI is also coordinating the South Carolina Shorebird Habitat Management Group, which consists of a variety of federal, state, and private partners that assist landowners in managing for shorebird habitat during the spring and fall migration.

SAMBI continually proves to be a Plan that reaches beyond its designated borders to achieve its goal of conservation for all birds across all habitats. Often overlooked are the conservation needs of pelagic birds, birds that live in open oceans or seas. SAMBI has

pelagic bird component that describes SAMBI's goals and plans for this unique group of birds. The pelagic component of SAMBI is integrated into this plan, and is available also as a separate document.

At this time SAMBI, staying true to it's North American Waterfowl Management Plan roots, is exploring links with Mexico, the Caribbean, and Latin America. Most recently the American Bird Conservancy, working with the Tri-national NABCI Committee, has identified and linked BCR's in Canada and the United States with those in Mexico. Bird Conservation Region 27 is one of those, and SAMBI has a distinct link with Mexico in the Yucatan, El Triunfo, and Chamela-Cuixmala with species such as, but not limited to, Chuck-will's Widow, Wood Thrush, Worm-eating Warbler, Swainson's Warbler, and Louisiana Waterthrush. It is highly likely that partners in SAMBI will establish relationships with partners in Mexico, Canada, and the Caribbean to address conservation needs for some of these common species. SAMBI planners hope to aid in the conservation projects created or being created in these areas. SAMBI continues to be a model of adaptive management as planners and partners learn from each other and continually modify and update their conservation practices for the conservation of bird in the Western Hemisphere.

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