

MONITORING

A. Monitoring

Public investment in natural resource conservation has grown rapidly in recent years, along with the recognition of potential benefits in coordinating conservation activities. Increasingly, bird conservation is coordinated through organizations such as the North American Waterfowl Management Plan (NAWMP), Partners in Flight (PIF), the Waterbird Conservation for the Americas, the United States Shorebird Conservation Plan, and the NABCI. NABCI provides a forum to facilitate integrated conservation, and the emerging State Comprehensive Wildlife Conservation Strategies provide important incentives for coordination.

Monitoring can play a key role in supporting the continued growth of these and other bird conservation efforts by providing the information needed to inform decisions and evaluate their effectiveness. The value of coordination is especially apparent in bird monitoring, where economies of scale and effort can be realized and more useful monitoring products can be developed through coordination.

1. Waterfowl - annual mid-winter waterfowl inventories are conducted by federal and state agencies to get annual indices of wintering waterfowl populations along the Atlantic Coast. Data and analyses are available from the USFWS [Migratory Bird Data Center](#) website. Waterfowl population objectives for different flyways are presented in the 2004 update of the North American Waterfowl Management Plan. Since many of the priority waterfowl species in the SAMBI planning region are primarily migrating or wintering species in the BCR, the mid-winter inventories provide a means of tracking wintering population trends and distributions.

Additional monitoring for waterfowl in the South Atlantic through the South Atlantic Migratory Bird Initiative website is discussed in further detail below.

2. Shorebirds - regional assessments of important sites for monitoring shorebird are being developed as part of PRISM, which seeks to accomplish the monitoring goals of the U.S. and Canadian shorebird conservation plans. Preliminary information for the assessment of the South Atlantic region has been compiled and is available at [PRISM](#). These assessments are based in large part on International Shorebird Survey data, which are housed at the Manomet Center for Conservation Biology and are also available for review. Contact Manomet for more information on shorebird survey data.

In addition to survey data, shorebird population estimates have been presented at the continental level in the [U.S. Shorebird Conservation Plan](#), as well as at the regional level in the Southeastern Coastal Plains-Caribbean Region Report.

Additional monitoring for shorebirds in the South Atlantic, and in the entire Atlantic Flyway, through the South Atlantic Migratory Bird Initiative website is discussed in further detail below.

3. Waterbirds - surveys of waterbird colonies along the Atlantic Coast have occurred regularly in states in the SAMBI planning region. Summaries of these survey data for individual species by state is readily available from the State Working Groups.

Most recently, the U.S. Geological Survey Arizona Cooperative Fish and Wildlife Research Unit has developed a framework and protocol for monitoring marsh birds in North America to better assess population status and trends of high priority marsh birds and emergent wetland habitats (Conway 2004).

Monitoring for marsh birds/waterbirds through the SAMBI website is needed, and is currently being considered as an integral component of this monitoring website.

Pelagic – the following monitoring needs have been identified for pelagic species:

- 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 are needed in waters of the Southeast Continental Shelf and Gulf of Mexico.

4. Landbirds – a variety of programs are currently being used to monitor landbirds, including Breeding Bird Atlas projects, Breeding Bird Surveys, Christmas Bird Counts, and Avian Point Counts. These and related programs and databases are accessible at [Patuxent Wildlife Research Center Research Activities](#). Considerable attention is being given to point counts in the southeastern United States. The U.S. Forest Service, Region 8, has an extensive point count database that includes the SAMBI planning region, and this database is being used to build bird-habitat relationship models, and to assess population trends of species, particularly at the BCR level.

5. Other – A very important component of the NBCI is to implement and monitor Practice CP33, Upland Habitat Buffers for uplands birds, with primarily northern bobwhite being considered. All states in the SAMBI planning region have acreage allocations for this Practice.

B. South Atlantic Migratory Bird Initiative and Website

1. Program - The South Atlantic Migratory Bird Initiative (SAMBI) monitoring program is a coordinated waterfowl and shorebird monitoring program developed under the auspices of this implementation plan for the purpose of monitoring short and long term population numbers and distribution of waterfowl and shorebirds seasonally, and to monitor habitat management goals as established in the Southeastern Coastal Plains-Caribbean Region Report, U.S. Shorebird Conservation Plan. This program was developed in the Manteo Office of the U.S. Fish & Wildlife Service for use primarily in the southeastern United States (Puerto Rico-North Carolina). However, the intent is to implement this program from Virginia through Maine (the remainder of the Atlantic

Flyway) in the near future, providing a flyway scale program for monitoring waterfowl, shorebirds, and waterbirds. This program has both a public site and a secure site. The public site, <http://samigbird.fws.gov/>, is a site that the public can access to view waterfowl and shorebird numbers seasonally at a given place in the southeastern United States. Examples of where information is available from can be found in Figures [18](#) and [19](#).

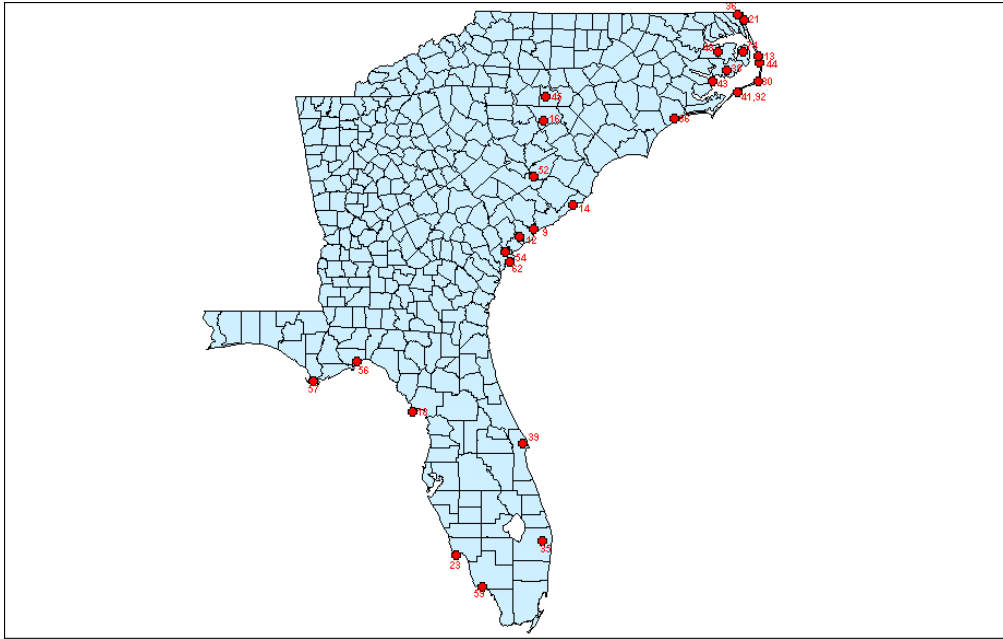


Figure 18. Areas Surveyed for Shorebirds in FL, GA, SC, and NC for SAMBI.

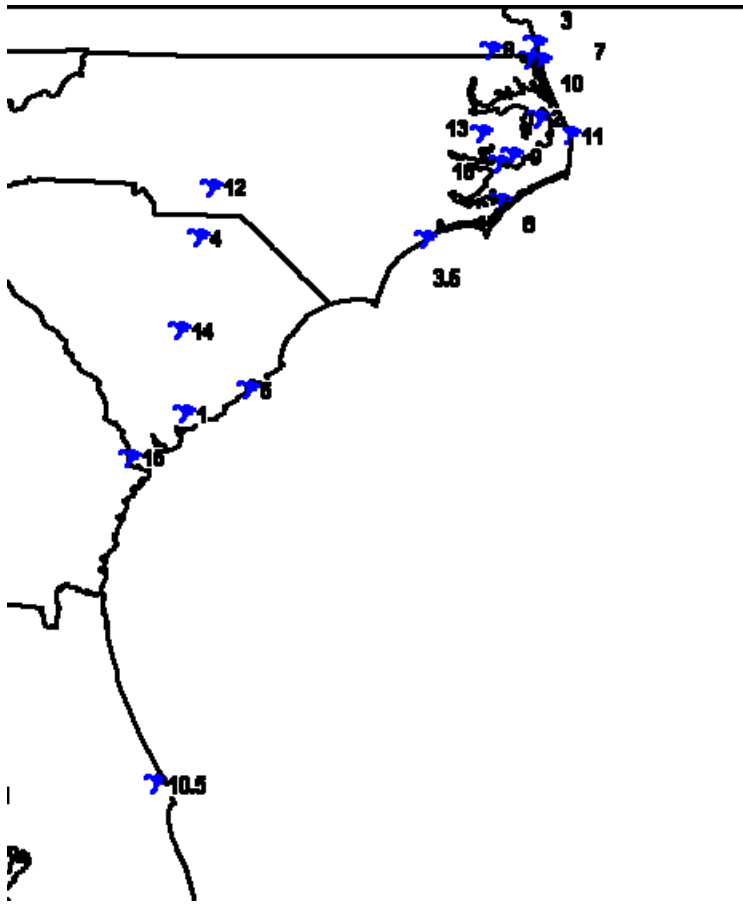


Figure 19. Areas Surveyed for Waterfowl in FL, GA, SC, and NC for SAMBI.

The SAMBI public website has more complete maps and listings of all areas that are currently being monitored. The secure website is for federal, state, and private land managers participating in the program to enter data on waterfowl and shorebirds numbers, and habitat acres being managed for shorebirds. All federal, state, and private interests managing for waterfowl and shorebirds are encouraged to participate in this program. This program currently provides the following information and uses:

- Distribution and trends of wintering waterfowl along the south Atlantic coast throughout the wintering,
- Shorebird migration timing and trends along the entire coast,
- Occurrence of rare or high priority species,
- Viewing “real-time” buildup and declines of shorebirds in managed properties to the south will enable managers to the north to fine tune dates of impoundment drawdown, thus, better managing habitats in synchrony with the current migration season,
- Providing a better network for monitoring of color banded shorebirds through the

migration period,

-Public access to data will mean less demands on Refuge staff for information on waterfowl/shorebird numbers, and

-Better management decisions on how to allocate impoundment acres to meet the needs of both waterfowl and shorebirds.

2. Relation to PRISM - This section discusses the relationship of PRISM to the shorebird component of the SAMBI coordinated shorebird effort.

PRISM is a blueprint for surveying shorebirds in North America, designed to meet the monitoring goals of the U.S. and Canadian Shorebird Conservation Plans (Brown et al. 2001; Donaldson et al. 2001). Both plans have identified the need for reliable information on the distribution, abundance and population trends of shorebirds in North America. PRISM has four major elements designed to address these information needs: arctic and boreal breeding surveys, temperate breeding surveys, temperate non-breeding surveys and neo-tropical surveys.

The temperate non-breeding survey component is intended to standardize data collection and storage among existing initiatives including the International Shorebird Surveys (ISS), Canadian Maritime Shorebird Survey, Western Shorebird Survey and the South Atlantic Migratory Bird Initiative (SAMBI).

Information gathered by ISS Cooperators over the last 30 years can suggest population declines, but analyses for population change have historically had weak sensitivity. This has prompted the ISS to sharpen its monitoring efforts by participating in the initiative of PRISM to estimate the sizes and trends of shorebird populations. Manomet is thus working to restore and initiate additional surveys at key sites along the Atlantic coast. The goal of the migration survey component of PRISM is to produce estimates of the mean number of shorebirds present during the survey period for each focal species. Focal species for PRISM and SAMBI are found in Table 8.

CODE	SPECIES
BBPL	Black-bellied Plover
SNPL	Snowy Plover
WIPL	Wilson's Plover
SEPL	Semipalmated Plover
PIPL	Piping Plover
KILL	Killdeer
AMOY	American Oystercatcher
GRYE	Greater Yellowlegs
LEYE	Lesser Yellowlegs
SOSA	Solitary Sandpiper
WILL	Willet
SPSA	Spotted Sandpiper

WHIM	Whimbrel
LBCU	Long-billed Curlew
MAGO	Marbled Godwit
RUTU	Ruddy Turnstone
REKN	Red Knot
SAND	Sanderling
SESA	Semipalmated Sandpiper
LESA	Least Sandpiper
DUNL	Dunlin
SBDO	Short-billed Dowitcher
COSN	Common Snipe

Table 8. Focal Shorebird Species in the Southeast for PRISM and SAMBI.

PRISM compatible surveys in the Southeastern U.S. will fall under the existing network of the South Atlantic Migratory Bird Initiative (SAMBI). Shorebird surveys in this region are underway in a network of wildlife management areas and refuges in NC, SC, GA and FL. Currently, the ISS is working to expand survey coverage in this region and contribute additional sites to the SAMBI network. The ISS will initiate surveys on non-refuge and private lands, which SAMBI is poised to include, but that have not traditionally been part of the network.

All new volunteers that Manomet recruits in the SAMBI area are requested to submit their results on the SAMBI database, and all PRISM sites in the SAMBI area become a SAMBI site for the coordinated monitoring effort, and therefore, have a dedicated space on the SAMBI shorebird website. However, not all SAMBI shorebird sites are PRISM sites, as Manomet has determined that not all SAMBI sites meet the criteria for a PRISM site. PRISM sites in the southeast are displayed in [Figure 20](#).

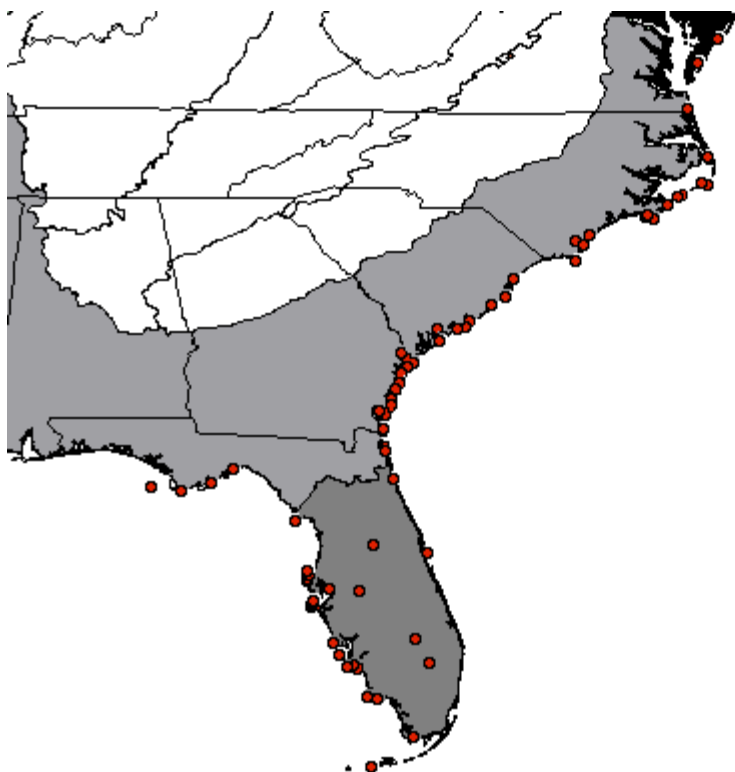


Figure 20. PRISM (and SAMBI) Shorebird Survey Sites in the Southeast.

For those stations that report directly to SAMBI, shorebird count data can be “dispersed” to the ISS on an annual basis. By the same token, for those cooperators who do *not* elect to enter their shorebird counts on the SAMBI database, the ISS will provide the shorebird count data to SAMBI on an annual basis. The SAMBI web interface manager at the U.S. Fish & Wildlife Service Office in Raleigh, NC, will facilitate the exchange of count data between the ISS and SAMBI.

Currently, ISS from the SAMBI area, SAMBI shorebird surveys, and PRISM shorebird surveys in the SAMBI area are all being consolidated into a single database, providing reliable information on the distribution, abundance and population trends of shorebirds in the SAMBI area, the Atlantic Flyway, and North America.

3. Developments

There are two primary developments occurring with the SAMBI coordinated waterfowl and shorebird monitoring effort. These are:

- 1) To fully incorporate the waterbird and marsh bird monitoring at the regional (SAMBI) level and flyway (Atlantic) scale.

2) To fully engage and implement federal, state, and private interests in monitoring of waterfowl, shorebirds, and waterbirds throughout the entire Atlantic Flyway, focusing on cooperation and participation from the Mid-Atlantic and North Atlantic States.

Originally developed as a web site of the South Atlantic Migratory Bird Initiative to monitor waterfowl and shorebird populations in the South Atlantic States of NC, SC, GA and FL, the waterbird monitoring initiative (under development) proposes to expand this monitoring to the entire eastern United States. The web site will allow wildlife managers to enter waterfowl and shorebird survey data, providing the opportunity to monitor in real time, these bird populations in the eastern U.S. The site will also include an inventory of managed habitats, enabling managers to more effectively allocate funding and manage their lands to meet the seasonal needs of migrating birds.

Staff of the ACJV and Regions 4 and 5 of the U.S. Fish & Wildlife Service are currently working toward achieving the above goals.