SC Project Webpage

COASTAL SURVEY

The SEAMAP - South Atlantic Coastal Survey, funded by the National Marine Fisheries Service (NMFS) and conducted by the South Carolina Department of Natural Resources - Marine Resources Division (SCDNR-MRD), began in 1986. This survey provides long-term, fishery-independent data on the distribution and relative abundance of resident and transient fishes, elasmobranchs, decapod and stomatopod crustaceans, sea turtles, horseshoe crabs, and cephalopods that are accessible by high-rise trawls. Twenty-three finfish, four decapod species, all marine turtles, all coastal shark species, and horseshoe crabs were selected as priority species by the SEAMAP-SA Committee. Additional data recorded for priority species include measurements of length or width for all priority species, sex and individual weights for blue crab, sharks, sea turtles, and horseshoe crabs, and reproductive information on commercially important penaeid shrimp and blue crabs.

Samples are taken by trawl from the coastal zone of the South Atlantic Bight (SAB) between Cape Hatteras, North Carolina, and Cape Canaveral, Florida (Figure 1). Multi-legged cruises are conducted in spring (early April - mid-May), summer (mid-July - early August), and fall (October - mid-November).

Stations are randomly selected from a pool of stations within each stratum. From 1989 through 2000, stations were initially selected using proportional allocation. In 2001, the method of allocation changed to optimal allocation and the number of stations allocated to each stratum was determined annually. From 2001 to 2008, a total of 102 stations are sampled each season (306 stations/year) within twenty-four shallow water strata, representing an increase from 78 stations previously sampled in those strata by the trawl survey (1990-2000). In 2009, the number of stations sampled each season increased to 112 (336 total). Strata are delineated by the 4 m depth contour inshore and the 10 m depth contour offshore. In previous years (1990-2000), stations were sampled in deeper strata with station depths ranging from 10 to 19 m in order to gather data on the reproductive condition of commercial penaeid shrimp. Twenty-seven stations located within ten outer strata in the southern half of the SAB were sampled in spring to collect data on spawning of white shrimp. Sixteen additional stations in the seven outer strata off North Carolina were sampled in fall to gather data on the reproductive condition of brown shrimp. No stations in the outer strata were sampled in summer. Outer strata were abandoned in 2001 in order to intensify sampling in the more shallow depth-zone.

Historical Table

Pilot Phase	1986	• Participating states sample their respective coastal waters • Stratified random sampling design • Daylight sampling in November-December with 35' high-rise nets • Trawl samples sorted to species with each species weighed and the individuals counted and measured.
	1987 to 1988	• SCDNR took over all sampling in South Atlantic Bight (Cape Canaveral, FL to Cape Hatteras, NC) • Fixed-station sampling design • Day/night sampling in monthly cruises of ~ 7 sea days with 75' mongoose-type falcon trawls • Priority species sorted, weighed and measured. Non-priority species divided into taxonomic groups and each group weighed.
Full Survey	1989	• Number of stations proportionally allocated to area of each stratum (2 to 8 per stratum). Stations initially randomly selected, with stations sampled during all cruises • Night sampling (Spring); Daylight sampling (Summer and fall) • 24 inner (15-30 ft), 24 outer strata (30-60 ft) • Contents of each trawl sorted to species. Total biomass and number of individuals recorded for all finfish species, elasmobranchs, decapod and stomatopod crustaceans, and cephalopods. Priority species weighed collectively and individual lengths recorded. Additionally Penaeid shrimp: total length, sex, ovarian development, spermatophore development, and occurrence of mated females; Blue crab: Carapace width, weight, sex, maturity, and presence and developmental stage of eggs; Sharks: weighed, total length and fork length, and sex noted (1994-present); Marine turtle measurements and tagging.
	1990 to 2000	• Daylight sampling during seasonal cruises (Spring, Summer, Fall) • 24 inner strata sampled all cruises. 10 outer strata in southern half of the SAB sampled in spring, and 7 outer strata off North Carolina sampled in fall • Stations were sampled in deeper strata with station depths ranging from 10 to 19 m.
	1998 to 2000	• Additional stations added to all strata to create pool of trawlable sites. Stations chosen randomly from pool in each stratum. Number of stations sampled within each stratum fixed.
	2001 to 2008	• Outer strata sampling eliminated. Number of stations sampled within each stratum selected annually by optimal allocation. Random selection of stations within each stratum. Total number of stations sampled in inner strata each season increased from 78 to 102 (306 stations/year). • Sharks, marine turtles, and horseshoe crabs added to priority species list. • Age and growth sampling for selected sciaenid species (suspended in 2007, resumed in 2008). • Sampling of stomach contents of weakfish in 2005 and 2006 • Sampling of stomach contents of selected sciaenid species in 2008 and continued in subsequent years
	2009	• Total number of stations sampled in inner strata each season increased from 102 to 112 (336 stations/year). Strata are delineated by the 4 m depth contour inshore and the 10 m depth contour offshore.
	2010	• Sampling of stomach contents of Atlantic Croaker, Weakfish, and Southern Kingfish discontinued • Sampling of diet of Bluefish, King Mackerel, and Spanish Mackerel added.
	2013	• Sampling of gonad tissues of Atlantic Croaker, Weakfish, and Southern Kingfish discontinued. • Diet study discontinued.

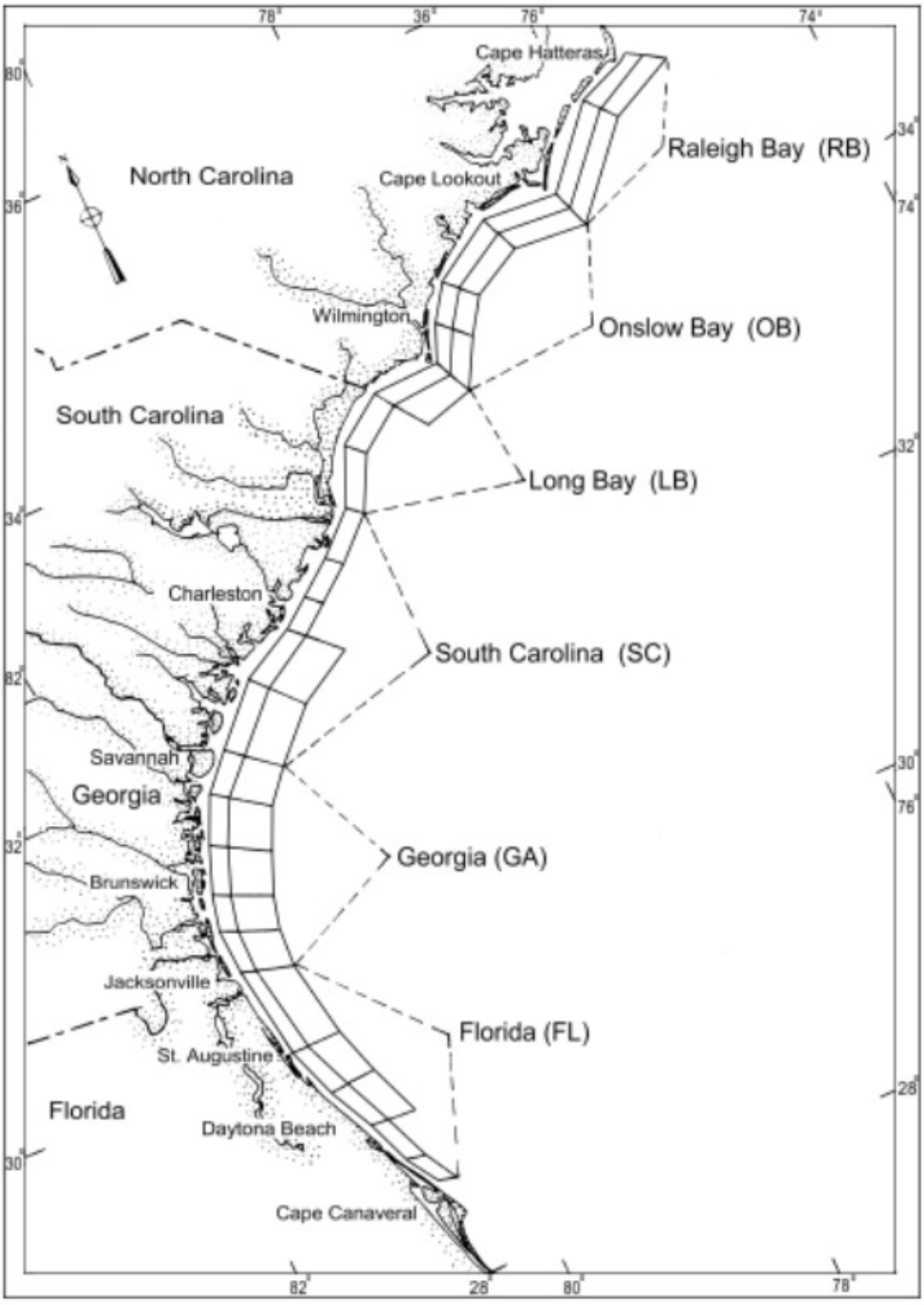

Figure 1. Strata sampled by the SEAMAP-SA Coastal Survey. Inner (shallow) strata sampled during all seasons throughout the survey. Outer (deep) strata were sampled (south in spring, north in fall) from 1990-2000. (Strata are not drawn to scale.)