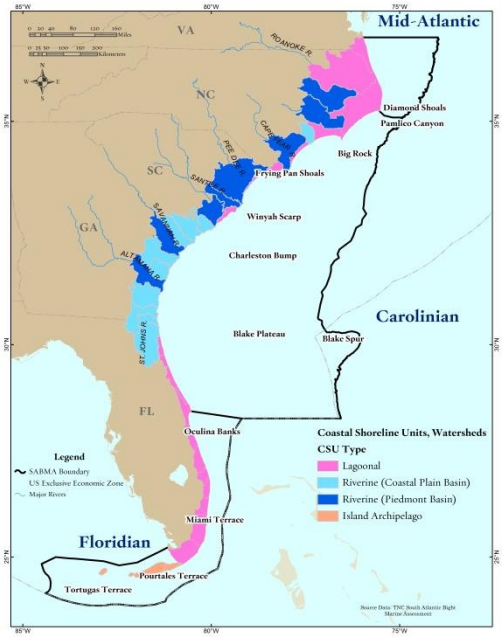
South Atlantic Bight Marine Assessment (SABMA)
Coastal Data Summary



Project Webpage:
http://nature.ly/marineSAtlanticBightERA

Coastal Data and Full Metadata:
http://easterndivision.s3.amazonaws.com/Marine/SABMA/SABMACoastalEcosystems.zip

Coastal Chapter:
http://easterndivision.s3.amazonaws.com/Marine/SABMA/SABMA_Chapter02_CoastalEcosystems.pdf

For Questions Please Contact:
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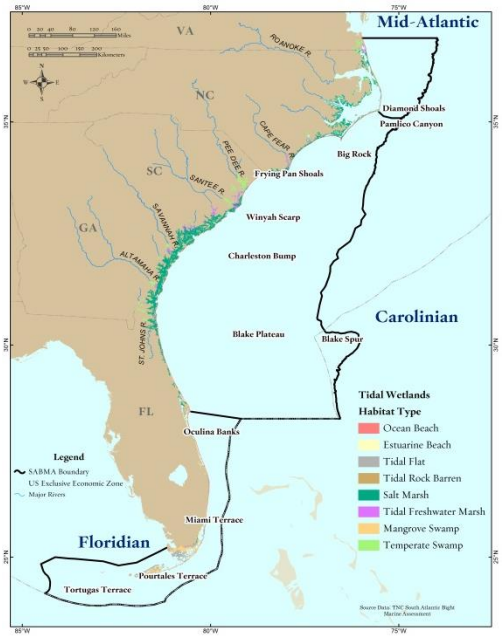
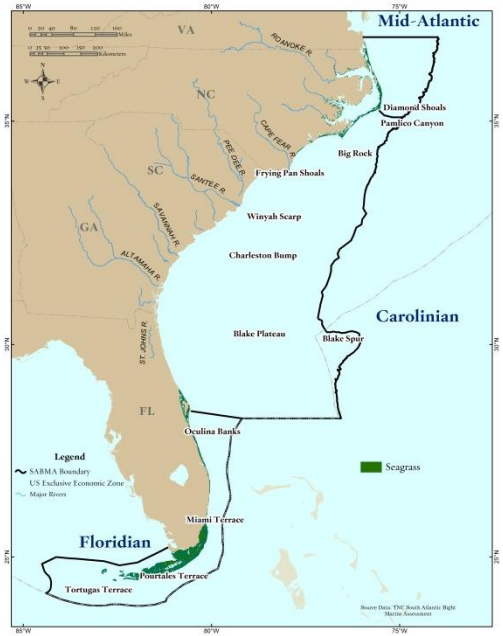
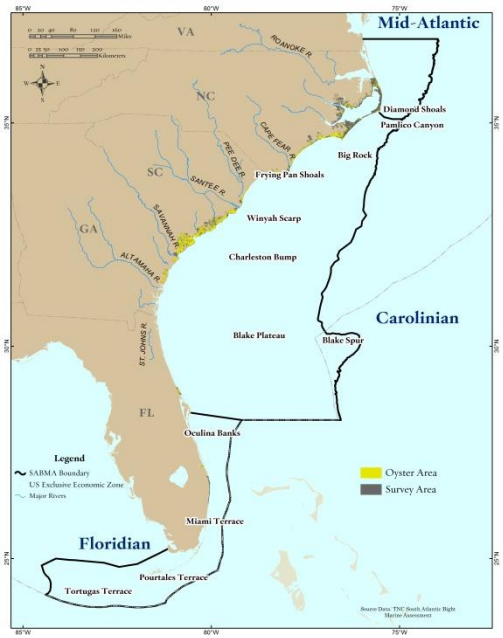
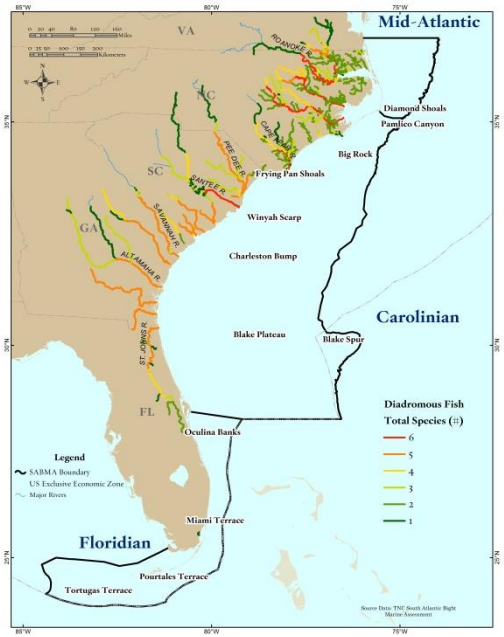
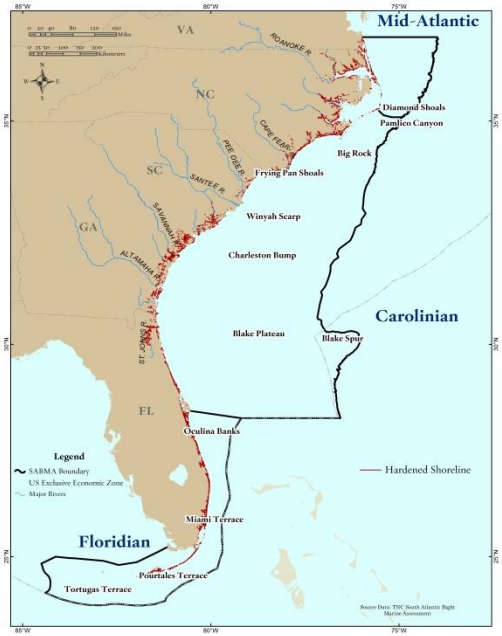


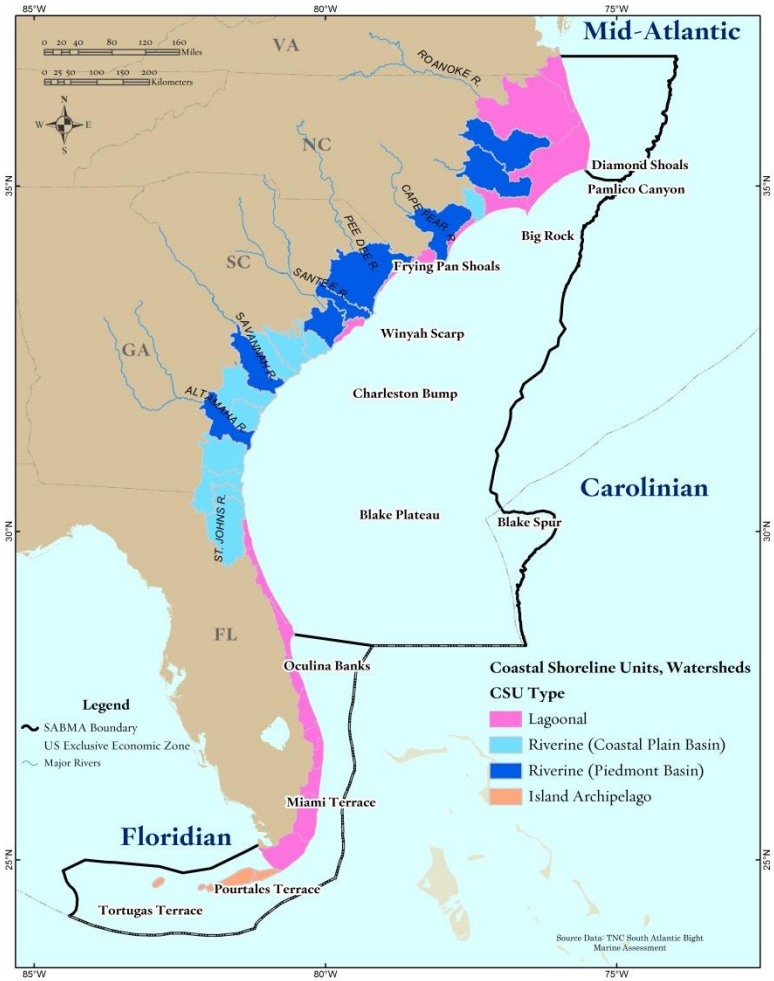








Coastal Shoreline Units, Watersheds



Data Sources: The United States Geologic Survey (USGS) Watershed Boundary Dataset - 10-digit Hydrologic Units (HUCs), and NOAA Coastal Assessment Framework – Estuarine and Coastal Drainage Area watersheds (EDAs and CDAs)

Years: 2014

Dataset Description & Methods Overview:

This dataset was created to delineate and attribute coastal watersheds for the entire extent of the South Atlantic Bight Marine Assessment project area. Coastal shoreline units (CSUs) were selected as the primary analysis unit for the coastal ecosystems section of the assessment. The United States Geologic Survey (USGS) Watershed Boundary Dataset - 10-digit Hydrologic Units (HUCs) were used as the base for CSU watershed delineation. The HUC10 watershed data was augmented with information from the NOAA Coastal Assessment Framework – Estuarine and Coastal Drainage Area watersheds (EDAs and CDAs), in conjunction with natural features, current patterns, and local knowledge. The result is a continuous string of 39 CSUs that covers the SABMA project area. Coastal habitats, species and condition datasets were then attributed to their respective CSUs. Intertidal and subtidal attributes were connected to CSUs based on distance to nearest shoreline. Terrestrial attributes were linked based on coastal watershed (as delineated by each of these representative polygons). This data set provides general CSU statistics (e.g. size and terrestrial area), resource extents (e.g. wetlands habitats, diadromous fish species) and condition information (e.g. land use classes) for each of the 39 CSUs developed for the assessment.

*See final report and metadata for detailed methods and more information.

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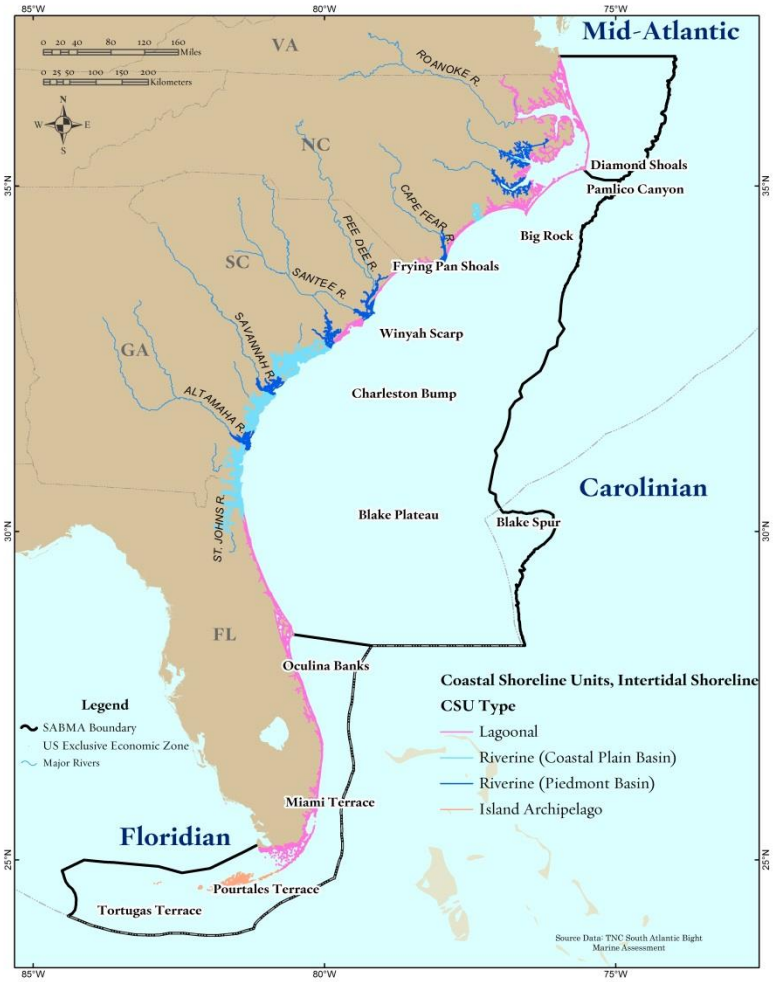
Coastal Shoreline Units, Intertidal Shoreline



Data Sources: NOAA Environmental Sensitivity Index (ESI) shoreline (1996 - South Carolina, 1997- Georgia, 2003 - Peninsular Florida, 2005 - Virginia, 2011- North Carolina and 2013 - South Florida).

Years: 1996-2013

Dataset Description & Methods Overview:

This dataset was created to delineate and attribute coastal shorelines for the entire extent of the South Atlantic Bight Marine Assessment (SABMA) project area. Coastal shorelines are a critical component of Coastal Shoreline Units (CSUs), the primary analysis unit for the coastal ecosystems section of the assessment. Coastal habitats, including intertidal wetlands, seagrass beds, and oyster reefs we attributed to individual CSUs based on distance from nearest shoreline. The resulting dataset defines and describes the 39 CSUs based specifically on their coastal shoreline including length and area of associated intertidal habitats. The Environmental Sensitivity Index (ESI) was used as the base shoreline for the SABMA. Shorelines stretches were assigned to a specific Coastal Shoreline Unit based on correlation with coastal watersheds and natural features. The result is a continuous string of 39 shoreline extents which are incorporated as part of the CSUs for the SABMA project area. A suite of prioritized intertidal habitats was associated with the delineated coastal shorelines - salt marsh, tidal freshwater marsh, tidal forests, tidal flats, estuarine beaches, oceanfront beaches, seagrass beds, and oyster reefs – based on distance to nearest shoreline. This dataset provides general coastal shoreline statistics (e.g. length) and extent of attributed intertidal and subtidal habitats for each of the 39 CSUs developed for the assessment.

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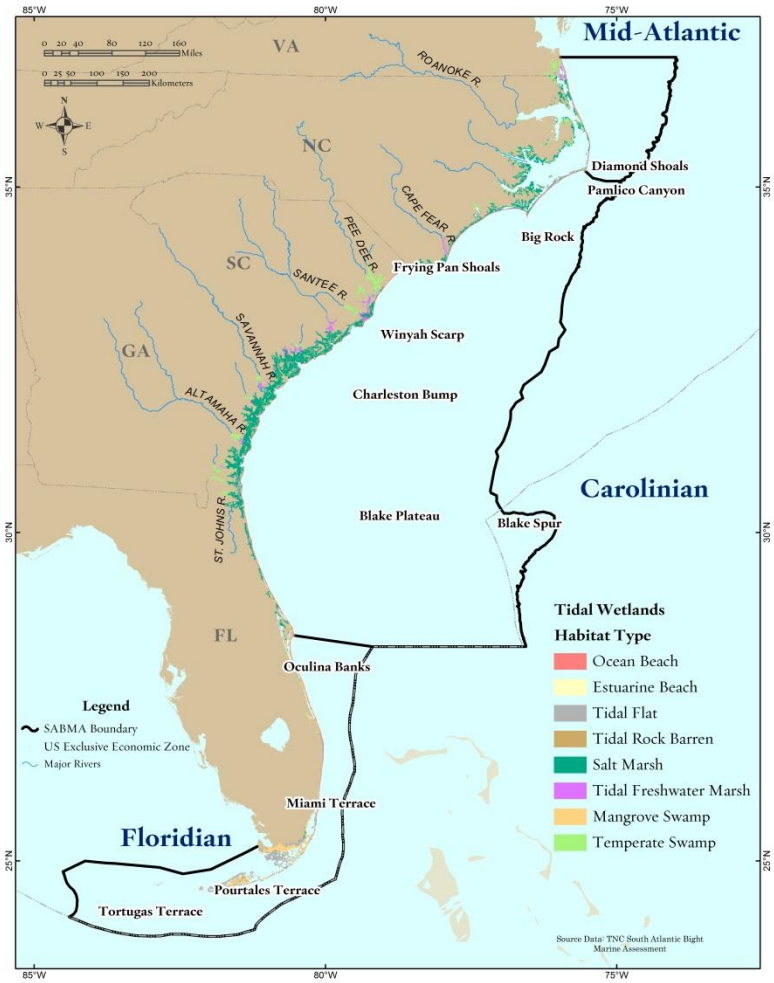
Tidal Wetlands



Data Sources: USFWS National Wetlands Inventory (NWI 2013), NOAA C-CAP Southeast Region 2010-Era Land Cover, USGS and NC State University SEGAP Land Cover (2010), NOAA Environmental Sensitivity Index (ESI, 2013), FNAI Florida Cooperative Land Cover Map (v 2.3, 2012), FL FWRI Mangroves (2011), FL FWRI Tidal Flats (2009), GA DNR Coastal Land Cover (2009), and NC DENR DCM Wetland Mapping (1999).

Years: 1999-2013

Dataset Description & Methods Overview:

This dataset was created to characterize the extent of tidal wetland habitats within the South Atlantic Bight Marine Assessment project area. The SABMA focused on coastal tidal wetlands which were defined to include Salt Marsh, Tidal Freshwater Marsh, Tidal Forest (e.g. Cypress-Tupelo Swamps, Mangroves and Exposed Tidal Barren Limestone), Tidal Flats, Estuarine Beaches and Ocean Beaches. These wetland habitats are highly productive and provide a variety of functions within estuarine and marine ecosystems – serving as nursery, feeding and breeding grounds for fish and bird species, maintaining water quality, and increasing coastal resilience. When combined with other estuarine habitat, species and use information, this data can benefit coastal decision-making, siting of activities, and planning. The National Wetlands Inventory (NWI) is the base data for this dataset. NWI codes were grouped into different habitat types using the Sea Level Affecting Marshes Model, version 6 (SLAMM) classification system. The age of the NWI data varies across the region and efforts were made to fill data gaps by cross-referencing with newer national and regional data sources (e.g. SE- GAP) and incorporating state-based datasets. In some cases, state-based resource data was substituted for the NWI (e.g. Mangroves and ocean beaches in Florida). The various datasets were processed and merged into a single dataset.
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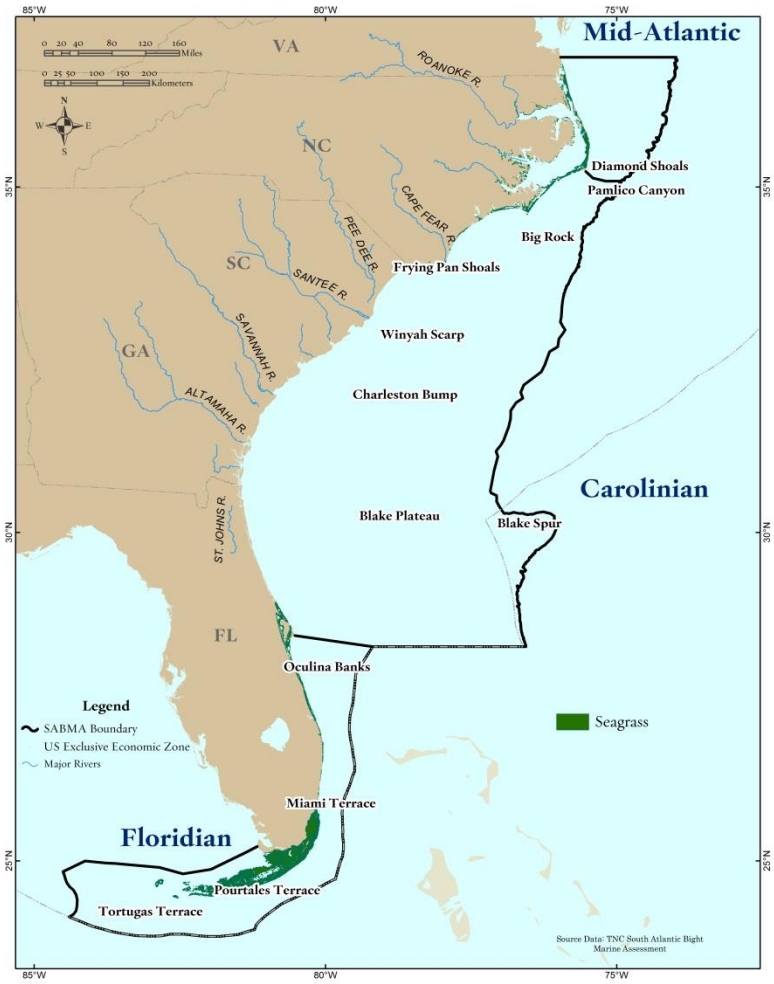
Seagrass



Data Sources: Elizabeth City State University, Submerged Aquatic Vegetation (SAV, 2003), NC DENR Albemarle-Pamlico National Estuary Partnership (APNEP, 2008) SAV Mapping. NC DENR DWR Neuse and Pamlico SAV Surveys (2008), FL FWRI Seagrass (2011), and FL FWRI Unified Florida Coral Reef Tract Map (2014).

Years: 2003-2014

Dataset Description & Methods Overview:

This dataset was created to characterize the extent of seagrass habitat within the South Atlantic Marine Assessment (SABMA) project area. In the southeastern estuaries, seagrasses are naturally present in the North Carolina and the Florida where they serve as fish nursery and foraging areas. In addition, seagrass beds trap nutrients and sediments, protect shorelines from erosion, and filter pollution. When combined with other coastal habitat, species and use information, this spatial data can benefit coastal decision-making, siting of activities, and planning.

This dataset was developed by combining state-specific submerged aquatic vegetation data from Florida's Fish and Wildlife Conservation Commission (FL FWC) and North Carolina's Department of Environment and Natural Resources (NC DENR). Each state varied in how they classified the difference in density across seagrass beds. Because the location and density of seagrass beds varies annually, total extent was included in the final dataset as an initial representation of habitat area. The resulting merged dataset represents the combined extent of seagrass habitat based what is currently available across the project area.

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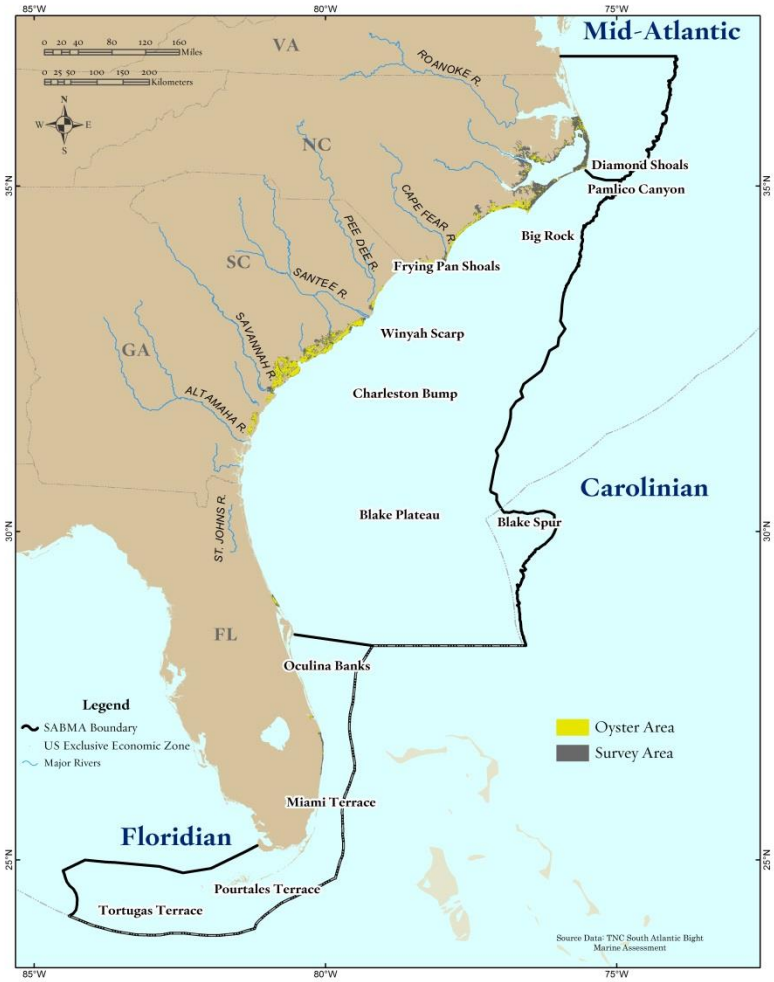
Oysters



Data Sources: NC DENR DMF Estuarine Benthic Habitat Mapping (2010), SC DENR Intertidal Oyster Reef Mapping (2010), GA DENR CRD Mapped Oyster Harvest Areas (2013), University of Georgia Marine Extension Coastal Georgia Shellfish Inventory (2011), FL FWRI Oyster Habitat (2011), and Avineon, Inc., & NOAA/NMFS/Southeast Regional Office Palm Beach County Essential Fish Habitat Mapping of Seagrass, Mangroves, Oysters, and Spartina in estuarine waters (2007).

Years: 2007-2013

Dataset Description & Methods Overview:

This dataset was created to characterize the extent of mapped oyster reef habitat located within surveyed areas in the South Atlantic Marine Assessment project area. Intertidal and submerged oyster reefs provide critical structural components to southeastern estuaries. They are recognized for their role in filtering water, mitigating shoreline erosion and storm surge, and supporting fish productivity. The entire extent of the potential oyster reef habitat has not been surveyed; therefore population gaps exist for portions of the project area. When combined with other coastal habitat, species and use information, this spatial data can benefit coastal decision-making, siting of activities, and planning. The completeness of current oyster reef datasets varies significantly across states. This dataset was created by combining the most recent oyster reef datasets for North Carolina, South Carolina, Georgia and Florida. In addition to oyster reef habitat, this dataset includes polygons showing the total area surveyed. Due to data limitations, this dataset does not represent total oyster reef habitat in the project area, but represents habitat area in mapped estuarine systems.

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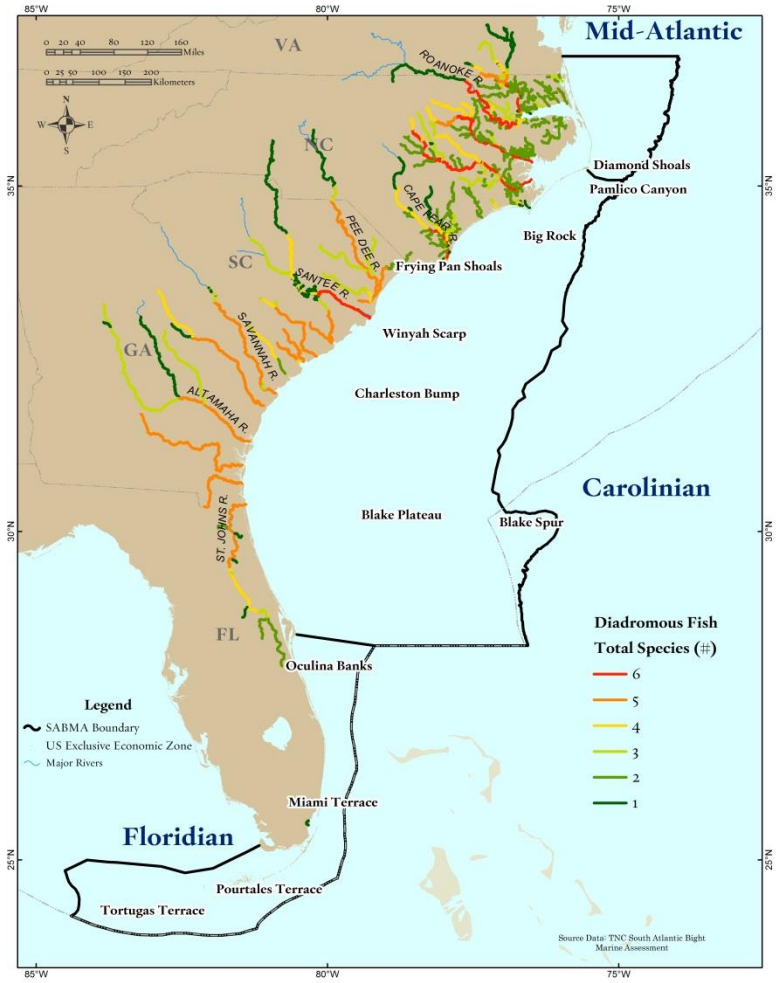
Diadromous Fish



Data Sources: TNC and SARP SEACAP: Southeast Aquatic Connectivity Assessment Project (2014)

Years: 2004-2014

Dataset Description & Methods Overview:

This dataset was created to characterize the use of southeastern river systems by six species of diadromous fish found along the Atlantic Coast: blueback herring, American Shad, Hickory Shad, Alewife, Shortnose Sturgeon, and Atlantic Sturgeon. Diadromous fish are a unique subset of species that utilize both freshwater and marine environments during their life cycles. Because of their dependence on a wide range of habitats, understanding their population range in the Southeast enables us to look across the status of individual habitats. This diadromous fish dataset was developed as part of the Southeast Aquatic Connectivity Assessment Project (SEACAP). Diadromous fish data was collected from the Atlantic States Marine Fisheries Commission (ASMFC 2004), as well as from the National Fish Habitat Partnership (NFHAP) database (Esselman et al 2013), the Multistate Aquatic Resources Information System (MARIS- http://www.marisdata.org/), and the North Carolina Museum Collection data (http://collections.naturalsciences.org/). Data was extensively reviewed and edited by fisheries biologists in the spring of 2014 at the Southern Division American Fisheries Society meeting in Charleston, South Carolina, as well as through a series of follow-up online meetings. The SEACAP dataset provides presence/absence and species population information by river stretch for selected diadromous fish species. For the purpose of the SABMA, this dataset selected only river stretches that fall within the project area, providing presence/absence of individual species and a total number of species present. This data associates the aforementioned species with CSU-based river stretches to help determine the maximum number of species present within a given watershed.

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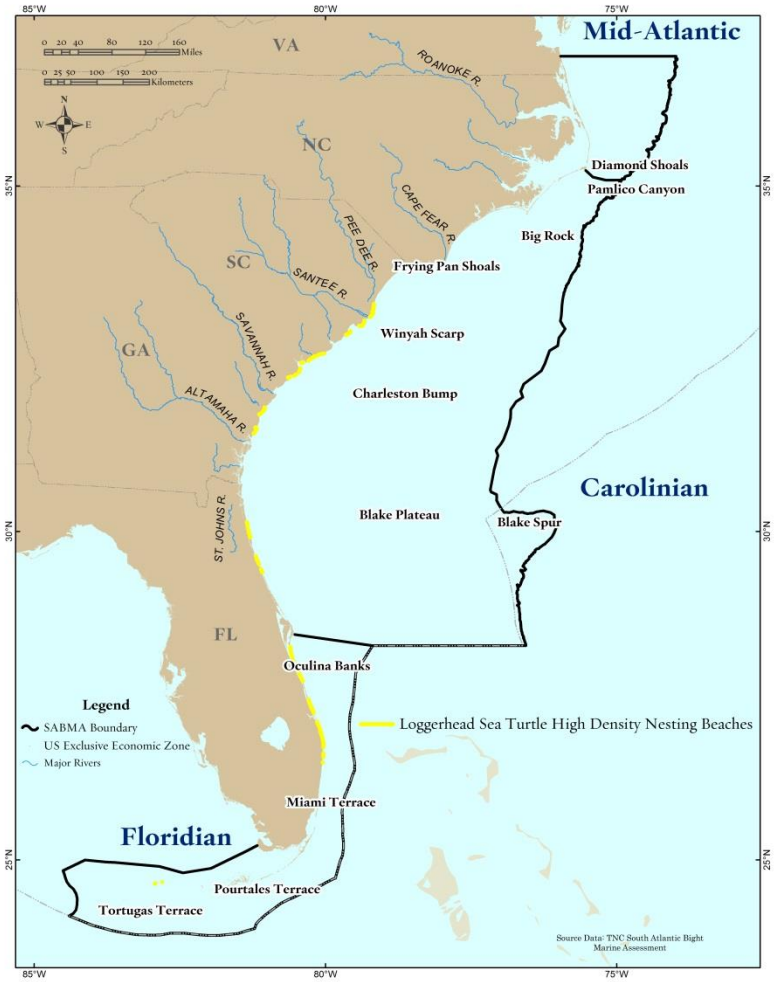
Loggerhead Sea Turtle High Density Nesting Beaches



Data Sources: SC DENR, MRRI Sea Turtle Nesting Locations (2013), FL FWRI FWC Statewide Nesting Beach Survey program Dry Tortugas Sea Turtle Nesting Beaches (2013), VA DGIF Virginia Sea Turtle Nesting Locations (2008 -2013).

Years: 2008-2013

Dataset Description & Methods Overview:

This dataset was created to characterize the high density nesting beaches for five subpopulations of loggerhead sea turtles within the South Atlantic Bight Marine Assessment project area. Loggerhead sea turtles are listed as threatened by the United States Fish and Wildlife Service. Their dependence on sandy beaches for nesting makes protection of these habitats a priority. As the South Atlantic Bight is a primary nesting area for the loggerhead turtle, efforts were made to link nesting population information with the habitat data evaluated within the coastal ecosystems section of the Assessment. This loggerhead sea turtle dataset is built upon six years of state-based turtle nesting information from Virginia, North Carolina, South Carolina, Georgia and Florida. The original data was analyzed within the Marine Mammal and Sea Turtle Chapter of the SABMA to understand the relative value of beach stretches across the project area for five recognized subpopulations of loggerhead sea turtles. That dataset was clipped to focus on priority beach stretches for loggerhead turtles based upon the highest mean nest density beaches for each subpopulation. This data enables us to link sea turtles to the SABMA Coastal Shoreline Units through identification of high density nesting beaches for loggerhead sea turtles.

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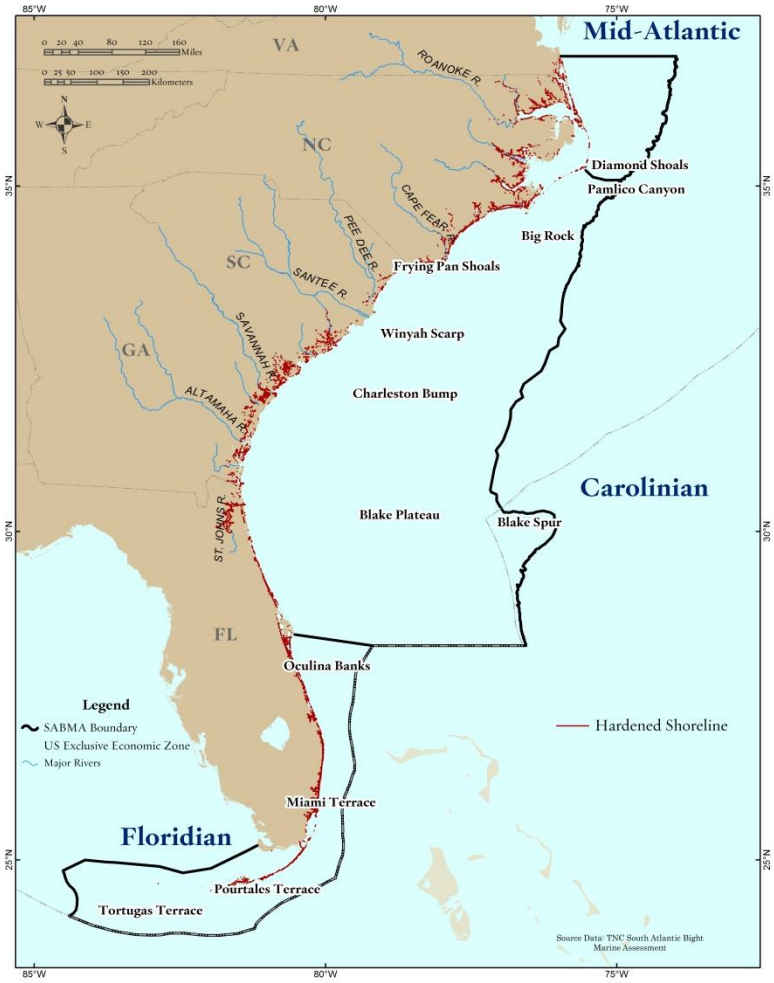
Hardened Shoreline



Data Sources: City of Virginia Beach - Shoreline Inventory Report (2012), NC DENR DCM Estuarine Shoreline Mapping Project (ESMP, 2013), Applied Coastal Research Laboratory Georgia Southern University SC Silver Jackets Phase I estuarine shoreline structure (2013), GA DENR Armored Estuarine Shorelines in Georgia (2010), NOAA Environmental Sensitivity Index (ESI) shoreline (1996 - South Carolina, 1997- Georgia, 2003 - Peninsular Florida, 2005 - Virginia, 2011- North Carolina and 2013 - South Florida).

Years: 1996-2013

Dataset Description & Methods Overview:

This dataset was created to characterize the hardened or man-made shorelines within South Atlantic Bight Marine Assessment project area. Hardened shorelines include the presence of structures such as bulkheads, rip rap, sea walls and groins. Such man-made structures located along the coast modify natural processes and can limit the migration of habitats, alter sediment movement, and modify water movement. Understanding the location of hardened shorelines is one mechanism to evaluate estuary condition. Several states (Georgia, North Carolina, southeastern South Carolina and Virginia) have recently initiated or completed shoreline characterization studies to identify hardened structures. When hardened shoreline data was unavailable, NOAA's Environmental Sensitivity Index (ESI) was used as the dataset for the hardened shoreline analysis. For ESI, all shoreline stretches with a classification of "man-made" were extracted. The state surveys are more recent and more specifically tailored to mapping hardened structures than the ESI, so where available, the state-specific shoreline characterization data was substituted. The resulting dataset represents the regional extent of hardened shorelines within SABMA Coastal Shoreline Units (CSU).

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