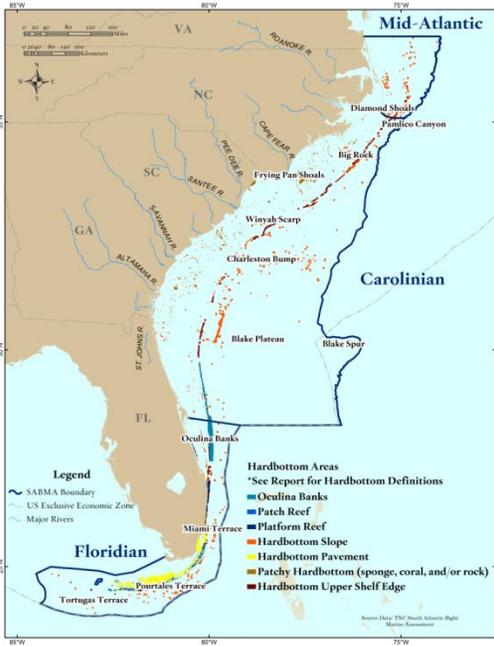


South Atlantic Bight Marine Assessment (SABMA)

Seafloor Data Summary

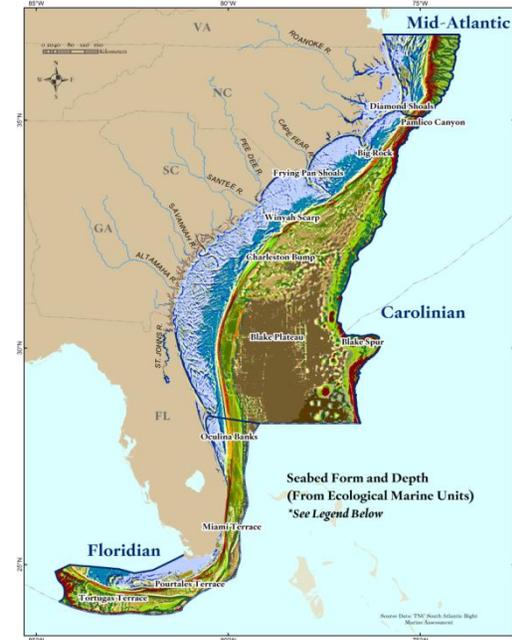


Project Webpage:
<http://nature.ly/marineSAtlanticBightERA>

Seafloor Data and Full Metadata:
<http://easterndivision.s3.amazonaws.com/Marine/SABMA/SABMASeafloorHabitats.zip>

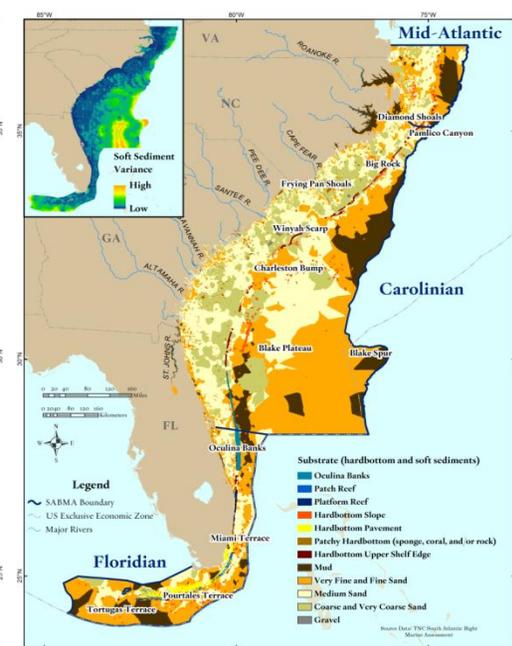
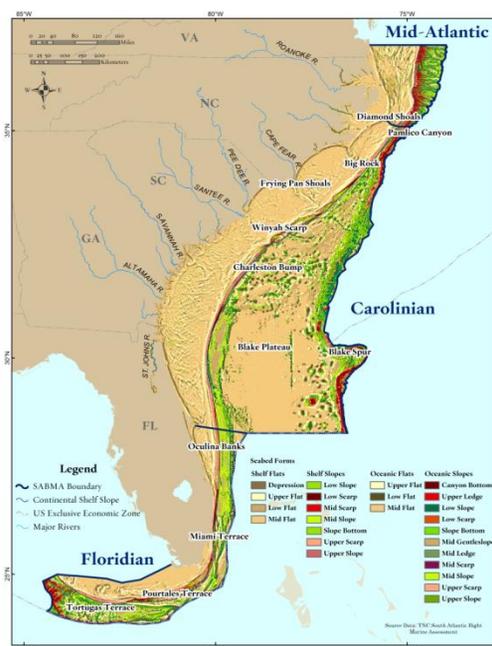
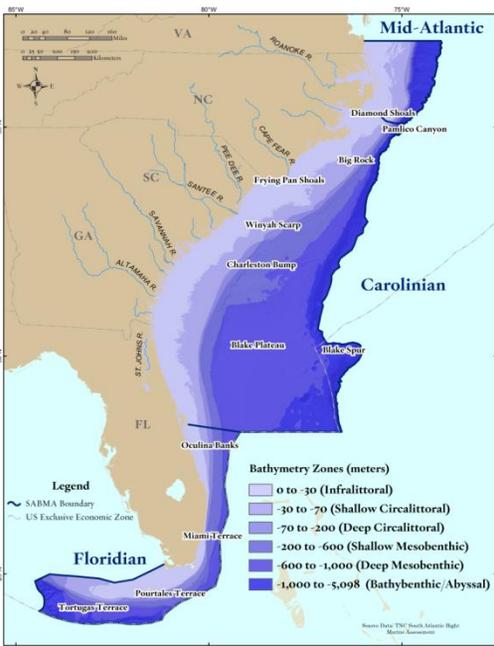
Seafloor Chapter:
http://easterndivision.s3.amazonaws.com/Marine/SABMA/SABMA_Chapter03_SeafloorHabitats.pdf

For Questions Please Contact:
eScience@tnc.org



The Nature Conservancy 

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Bathymetry

Data Sources: NOAA National Geophysical Data Center's Coastal Relief (CRM) Model grid, NOAA National Geophysical Data Center's Soundings: GEODAS points, and General Bathymetric Chart of the Oceans (GEBCO) grid

Cell Size: Final Dataset: 90 meter

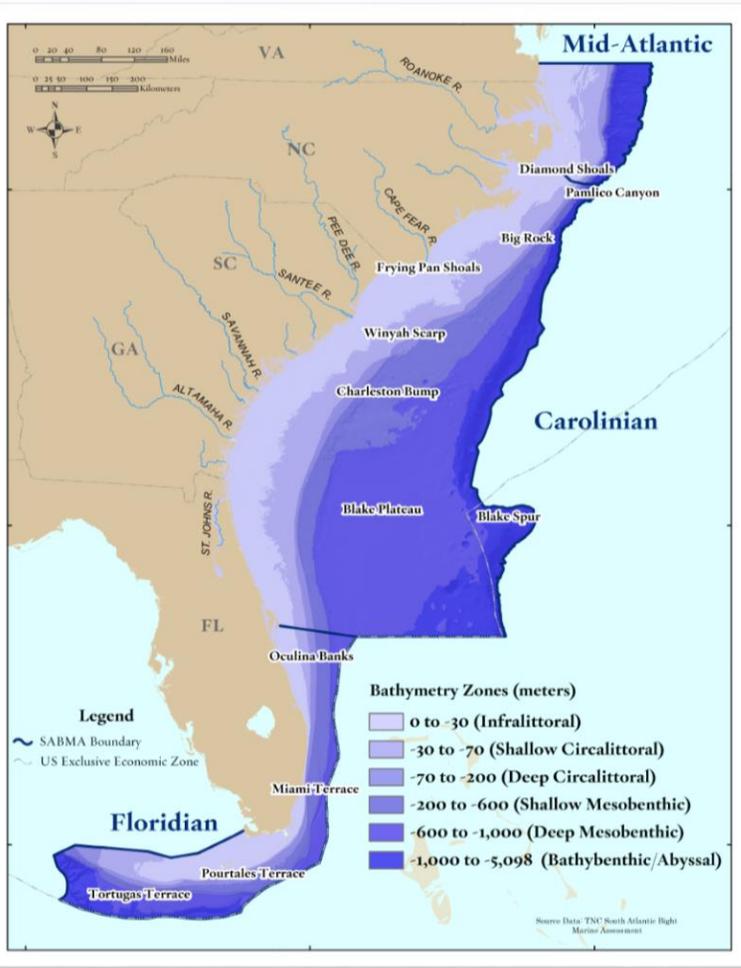
Source Datasets: CRM grid: ~90 meter, GEBCO grid: 810 meter

Dataset Description & Methods Overview:

This dataset was created for South Atlantic Bight Marine Assessment in order to map seafloor depths across the assessment's study area, map species depth preferences, to create the seabed form dataset and create one of the input datasets for the Ecological Marine Units (EMUs). The bathymetry dataset was created from the three sources listed above. We interpolated the CRM soundings (removed coastal estuary points and only used high resolution points after the 1950's) covering the Mid-Atlantic and Floridian regions and the continental shelf area of the Carolinian region. We filled in the coastal estuaries with the pre-interpolated CRM modeled data. The deepwater portion of the Carolinian region contained a substantial area outside the range of the CRM points. For this area we obtained 810 m² resolution data from GEBCO. The dataset was purportedly at 90 m; however, the resolution of the grid was actually 810 m. To create a smooth grid we aggregated the grid up from 90 m cells to 810 m cells and resampled the aggregated 810 m grid back to 90 m cells, averaging the values. We then calculated a focal mean for the new 90 m grid to smooth out the values, resulting in a new 90 m grid. The majority of the region is covered by the data interpolated from the CRM points, the estuaries were filled in with CRM modeled data, and the deepwater area of the Carolinian was filled in with GEBCO data. These were combined into one grid with a 90 m resolution.

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

For Questions Please Contact: eScience@tnc.org



Seabed Forms

Data Sources: Derived by The Nature Conservancy using the Bathymetry grid.
See Bathymetry metadata for sources.

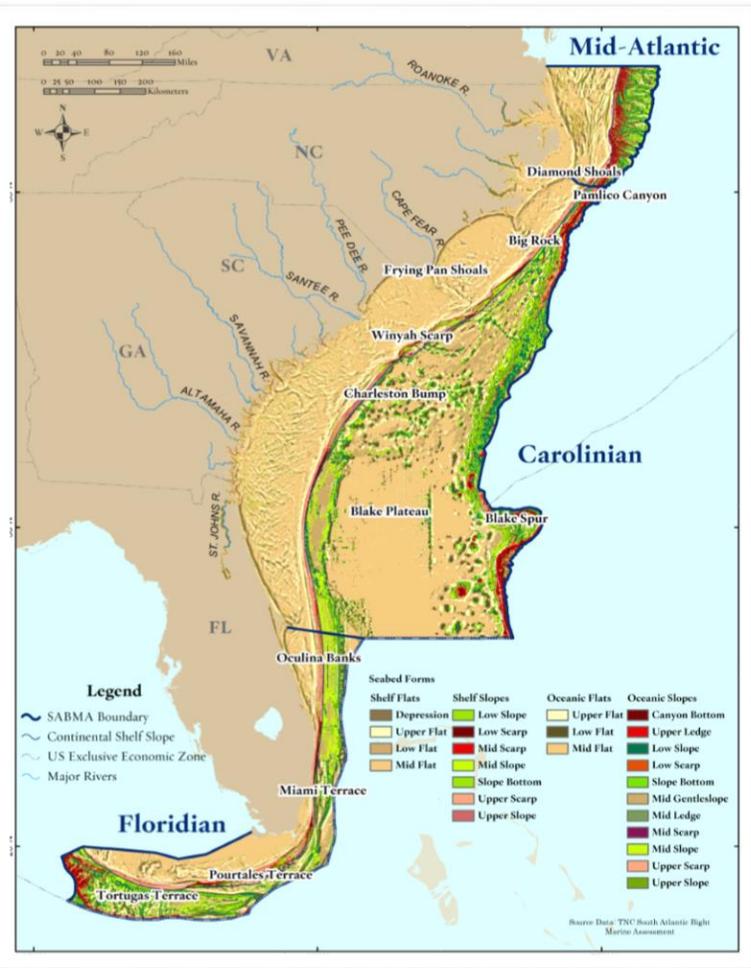
Cell Size: Final dataset: 90 meter

Dataset Description & Methods Overview:

This dataset was created for the South Atlantic Bight Marine Assessment in order to map seafloor topography (using slope and seabed position) and create one of the input datasets for the Ecological Marine Units (EMUs).

We characterized/mapped the seafloor topography (seabed forms) using the bathymetry grid, by calculating relative topographic position and degree of slope of each seafloor cell. From this we described different seabed forms such as a flat surface raised above its surroundings (a shoal) or a narrow slope bottom surrounded by steep slopes (a canyon bottom). As with the bathymetry, the seabed form cell resolution was 90 m for most of the region, but 810 m for the deepwater section of the Carolinian. Our methods were based on Anderson et al. (2010) which were derived from Fels and Zobel (1995).

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



Hardbottom

Data Sources: See hardbottom sources here:

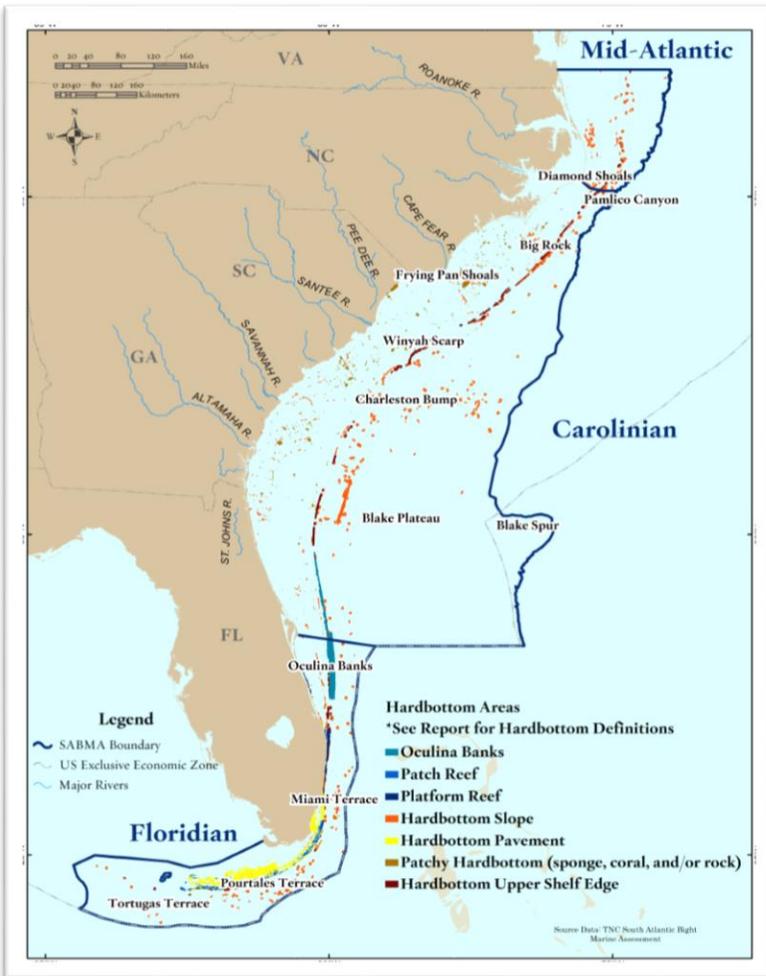
http://nature.ly/SABMA_HardbottomSources

Years: 1962-2013

Dataset Description & Methods Overview:

This dataset was created for the South Atlantic Bight Marine Assessment in order to map known and potential benthic hardbottom areas. To delineate hardbottom areas in the South Atlantic, we used observed rock substrate points and reef locations in conjunction with the seabed forms to create a map of confirmed and potential hardbottom areas.

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



Substrate (Soft Sediments and Hardbottom)

Data Sources: See hardbottom sources here:

http://nature.ly/SABMA_HardbottomSources

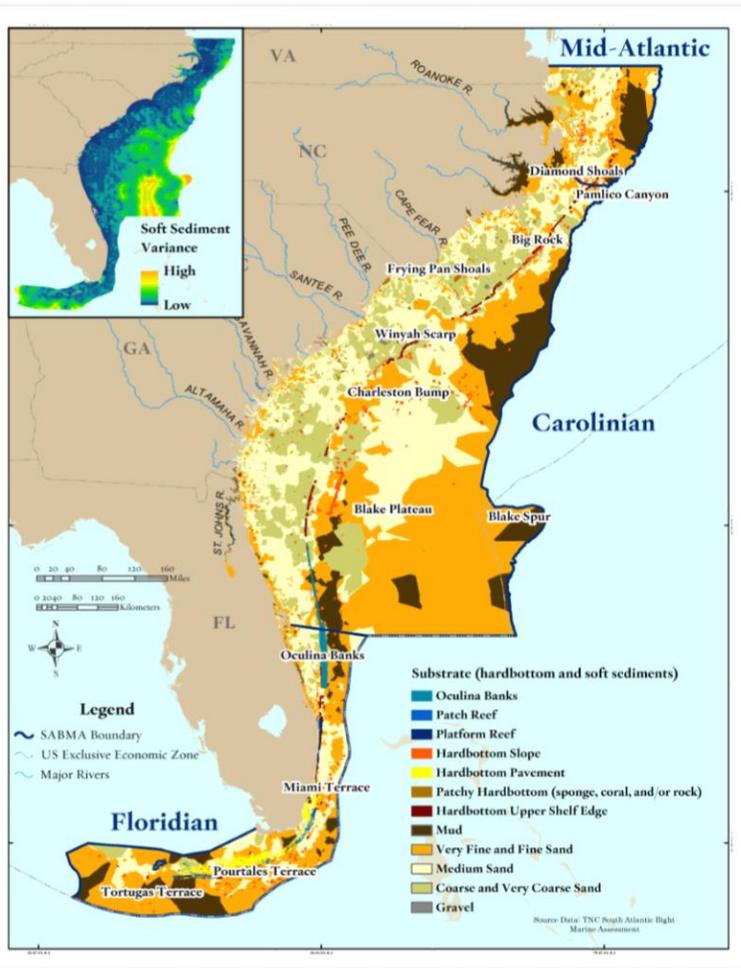
Soft Sediments: usSeabed (U.S. Atlantic and Gulf of Mexico and Caribbean), Florida Fish and Wildlife Conservation Commission Fish and Wildlife Research Institute's Fisheries-Independent Monitoring program, South Carolina Department of Natural Resources, North Carolina Carteret County Sand Search Cores (2011)

Cell Size: 90 meter

Dataset Description & Methods Overview:

This dataset was created for the South Atlantic Bight Marine Assessment in order to integrate known and potential benthic hardbottom areas with an interpolated grid of soft sediments. We mapped soft sediments using interpolations of sample points to create a wall-to-wall soft sediment map. To delineate hardbottom we used observed rock substrate points and reef locations in conjunction with the seabed forms to create a map of confirmed and likely hardbottom areas. This dataset is an integration of soft sediments and hardbottom. Where hardbottom areas were mapped, we replaced the soft sediment with these hardbottom areas to create this integrated substrate dataset.

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



Ecological Marine Units (Depth by Seabed Form)

Data Sources: Derived by The Nature Conservancy using the Bathymetry, Substrate (soft sediments and hardbottom), and Seabed Form grids. See each dataset's metadata for sources.

Cell Size: 90 meter

Dataset Description & Methods Overview:

This dataset was created for the South Atlantic Bight Marine Assessment in order to map the three way combination of bathymetry, substrate (soft sediments and hardbottom), and seabed forms. We combined all of this information into a single dataset called the Ecological Marine Units (EMUs). The EMUs represent the physical structure of the South Atlantic Bight seafloor and provide information about substrate (soft sediment and hardbottom), bathymetry and seafloor topography. To create an EMU, each of the three physical components was assigned a unique code with thousands for depth, hundreds for substrate, and tens for seabed form. See metadata and report for codes used. Each 90 m cell was then attributed with its combined value. For example: code 1113 identifies Infralittoral mud depressions while 4621 denotes Mesobenthic hardbottom upper slopes.

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

