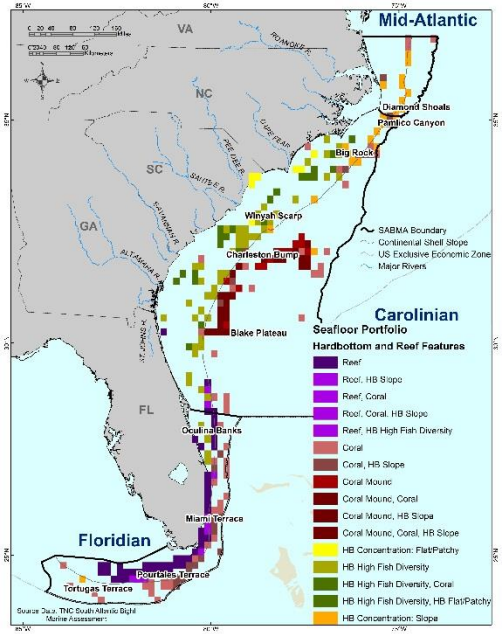
South Atlantic Bight Marine Assessment (SABMA)
Seafloor Portfolio Data Summary



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

Seafloor Portfolio Data and Full Metadata:
http://easterndivision.s3.amazonaws.com/Marine/SABMA/SABMAIdentifyingConservationAreas.zip

Portfolio Chapter:
http://easterndivision.s3.amazonaws.com/Marine/SABMA/SABMA_Chapter05_IdentifyingConservationAreas.pdf

For Questions Please Contact:
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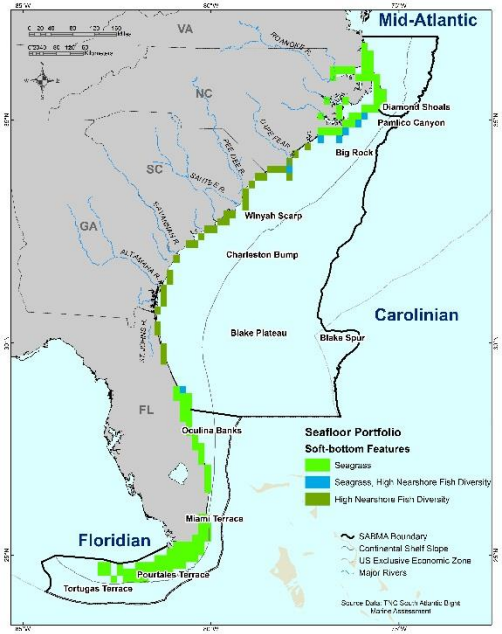
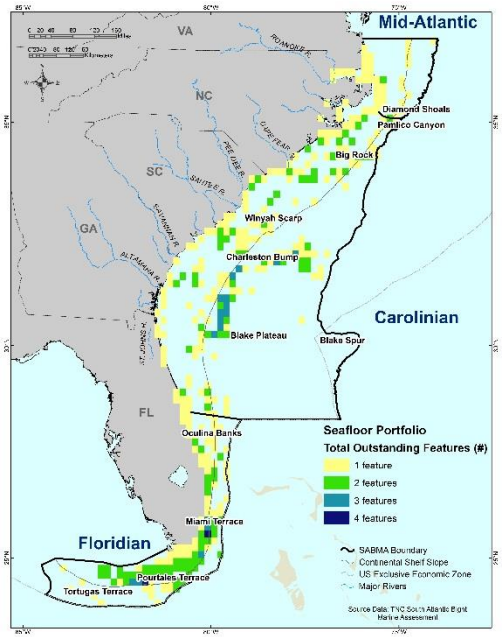
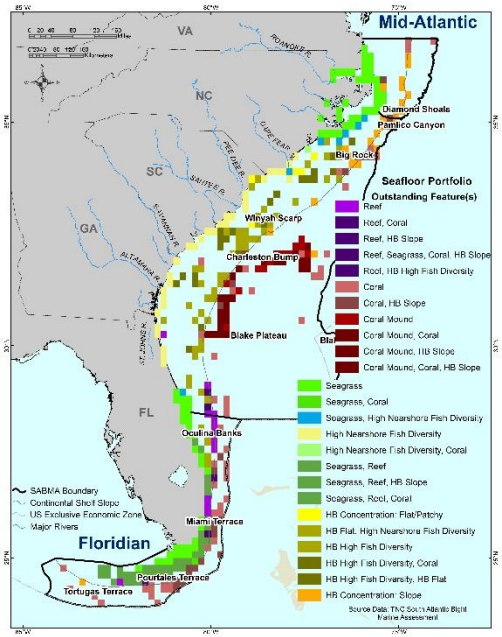
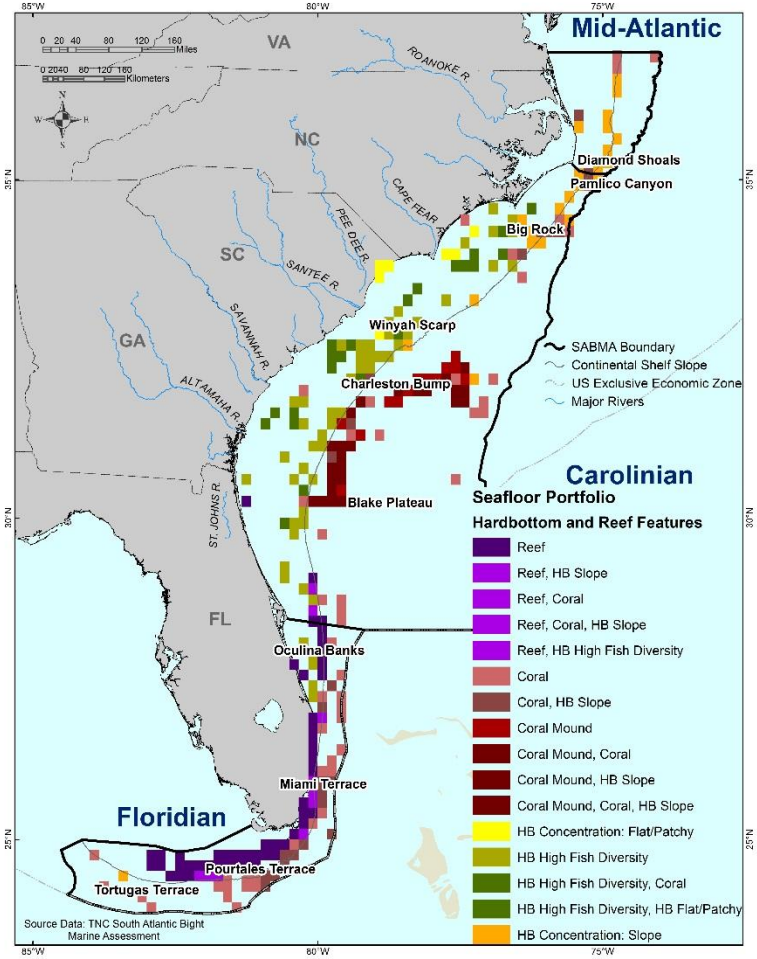






Seafloor Portfolio: Hardbottom and Reef Features



Data Sources: fish diversity: Reichert, M. 2009. MARMAP Chevron Trap Survey 1990-2012, SCDNR/NOAA MARMAP Program, SCDNR MARMAP Aggregate Data Surveys, The Marine Resources Monitoring, Assessment, and Prediction (MARMAP) Program, Marine Resources Research Institute, South Carolina Department of Natural Resources, P. O. Box 12559, Charleston SC; hardbottom sources: http://nature.ly/SABMA_HardbottomSources

Years: 1962-2013

Dataset Description & Methods Overview: To delineate known and potential hardbottom areas, we used observed rock substrate points and reef locations in conjunction with seabed forms. For the portfolio, the region was divided into a grid of ten-minute squares (TMS), and each TMS was characterized by the following seafloor features it contained. **Hardbottom with high fish diversity:** We ranked all the TMS within each depth zone based on their fish diversity scores, then selected the TMS where the scores were average or above (z-score > -0.5) for each zone. **Hardbottom with confirmed cold water corals:** We identified the TMS in each depth zone that contained both confirmed corals and above-average acreage of hardbottom. **Coral mounds:.** We identified the TMS that contained both above-average acreage of hardbottom and above-average densities of coral mounds (z-score > 0). **Hardbottom concentration areas:** For patchy hardbottom that occurred on flat topographic settings we calculated the average area across all TMS within each depth zone, and identified areas where the acreage was greater than one standard deviation above the mean (z-score > 1). We repeated the process for hardbottom concentrations that occurred on topographic slopes or ledges. **Platform Reef:** To identify concentration areas, we calculated the average amount of platform reef in each TMS then selected areas with greater than the mean amount (z-score >0). **Patch Reef:** To identify concentration areas, we calculated the average amount of patch reef in each TMS then selected areas with greater than the mean amount (z-score >0). **Pavement Reef:** To identify areas of high concentration, we calculated the average amount of pavement reef in each TMS then selected areas with greater than the mean amount (z-score > 0). **Oculina Bank:** We calculated the average amount of Oculina Bank in each TMS, then selected areas with greater than the mean amount (z-score > 0).

*See final report and metadata for detailed methods.

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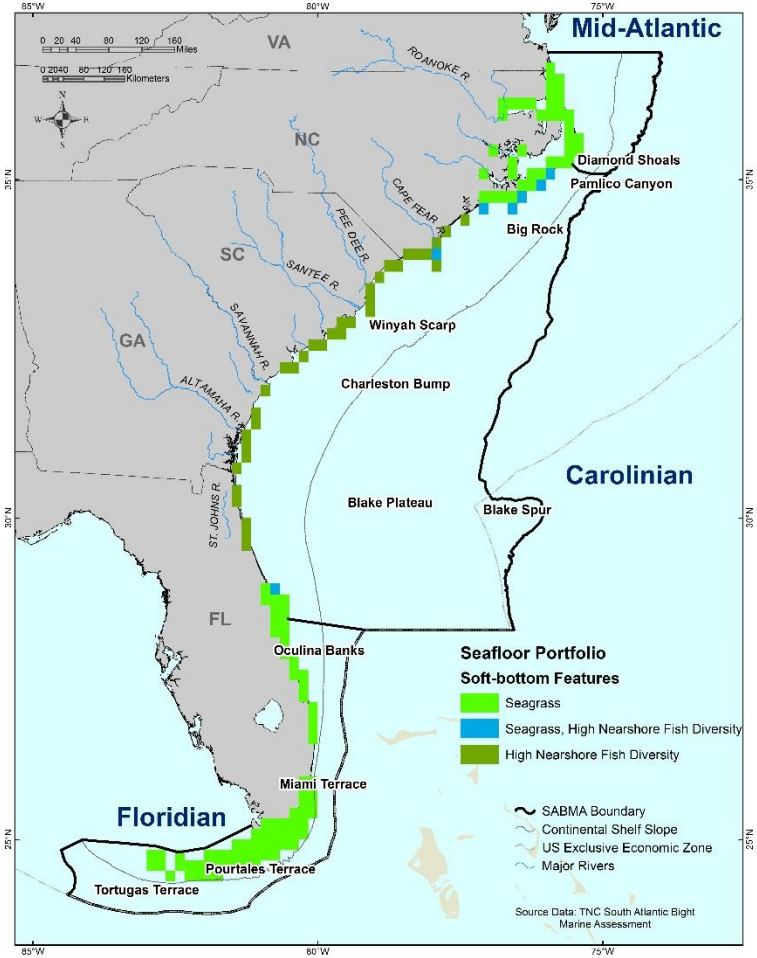
Seafloor Portfolio: Soft-bottom Portfolio



Data Sources: *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 (2013), South Carolina Department of Natural Resources, North Carolina Carteret County Sand Search Cores (2011). *Fish diversity:* SEAMAP-SA Data Management Work Group. 2014, April, 15. SEAMAP-SA online database. Retrieved from: http://www.dnr.sc.gov/SEAMAP/data.html

Years: 1960s - 2014

Dataset Description & Methods Overview: Soft-bottom with high nearshore fish diversity: To identify areas of high fish diversity we used data from the Southeast Area Monitoring and Assessment Program (SEAMAP-SA) shallow water trawl sampling program. We used the same methods as described in the coastal chapter on estuary-dependent fish to evaluate species richness, but we calculated the statistics (mean, range, and variance) for each sampling station rather than each CSU. This approach allowed determination of which fish species were found in each sampling station more often than expected given the number of times the station was sampled. To correct for effort, we first determined whether there was a significant relationship between effort and detection for each species. For each species where this relationship was significant, we extracted the standardized residuals from the regression model as an estimate of how much the detection varied from the expected amount. We counted the number of species with positive values and identified stations where more species were detected than expected from the amount of sampling. Scores based on the total number of species with positive values were calculated for each station; these were normalized across stations to calculate z-scores, and grouped into standard deviation classes. We ranked all the TMS based on their nearshore fish diversity scores, then selected the TMS where the scores were average or above (z-score > -0.5). **Soft-bottom with seagrass concentrations:** We used the regional seagrass dataset described in the coastal chapter to identify areas of abundant seagrass. We characterized each TMS by the total acres of seagrass habitat present, and calculated the mean abundance of seagrass in all TMS. TMS with seagrass abundance greater than the mean (z-score > 0) were selected.

*See final report and metadata for detailed methods

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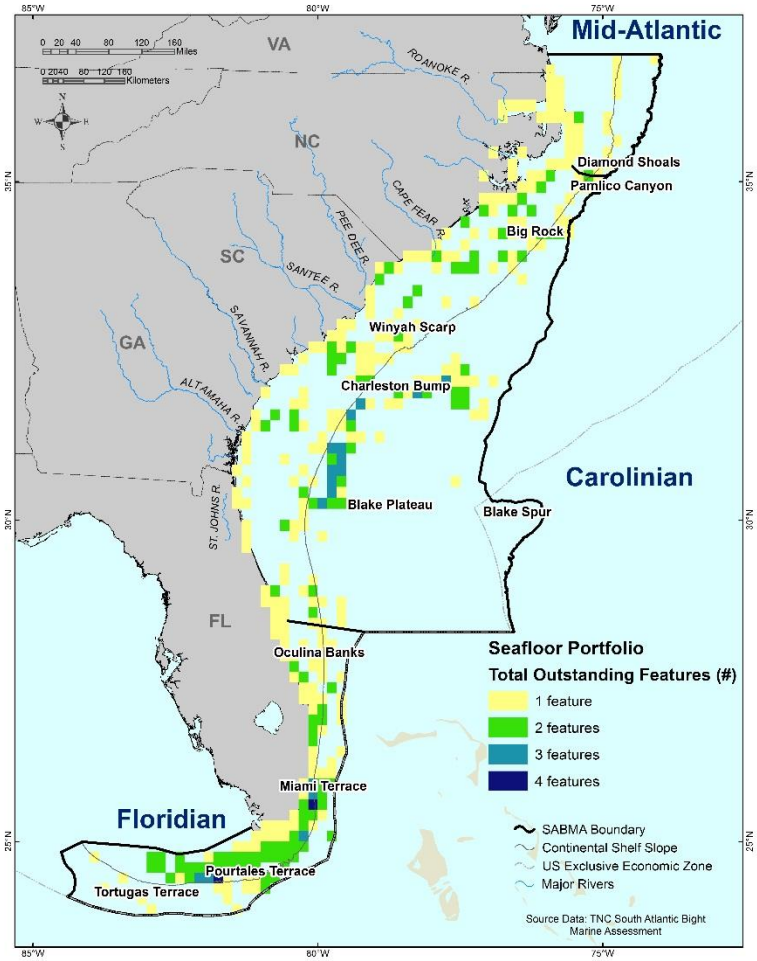
Seafloor Portfolio: Total Outstanding Features (#)



Data Sources: See hardbottom, reef, and soft-bottom data described on the previous slides. Refer to the SABMA seafloor and portfolio chapters for additional details and information.

Years: 1960's - 2014

Dataset Description & Methods Overview:

This dataset identifies a portfolio of priority conservation areas for species and habitats associated with the seafloor of the South Atlantic Bight. The goal was to identify places of high biodiversity or ecological importance that collectively represent the full range of seafloor habitats. Detailed information on seafloor features, data sources, and data processing steps used to map the features may be found in the associated seafloor and portfolio chapters.

The final seafloor portfolio with the total number of outstanding features shows the count of outstanding features found in each TMS. It combines the information from all eight individual queries (hardbottom with high fish species diversity, hardbottom with confirmed cold water corals, coral mounds, hardbottom concentration areas: flat/patchy, hardbottom concentration areas: slopes, coral reef, unconsolidated sediment with seagrass, and unconsolidated sediment with high nearshore fish diversity) to identify the full array of exemplary areas that support the diversity of the region. It consists of 381 TMS across all three seafloor target habitats: 1) rock substrates, 2) coral substrates, and 3) soft-bottom substrates (unconsolidated sediments).

Important areas include:

- The nearshore regions seaward from the major river mouths
- The shelf-slope break
- Hardbottom concentration associated with Platt Shoal, Cape Lookout Shoal, Cape Fear Shoal and the sand-ridge complexes of Charleston Harbor
- Stetson Ledge and the coral mound region
- The entire Florida shallow coral reef

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

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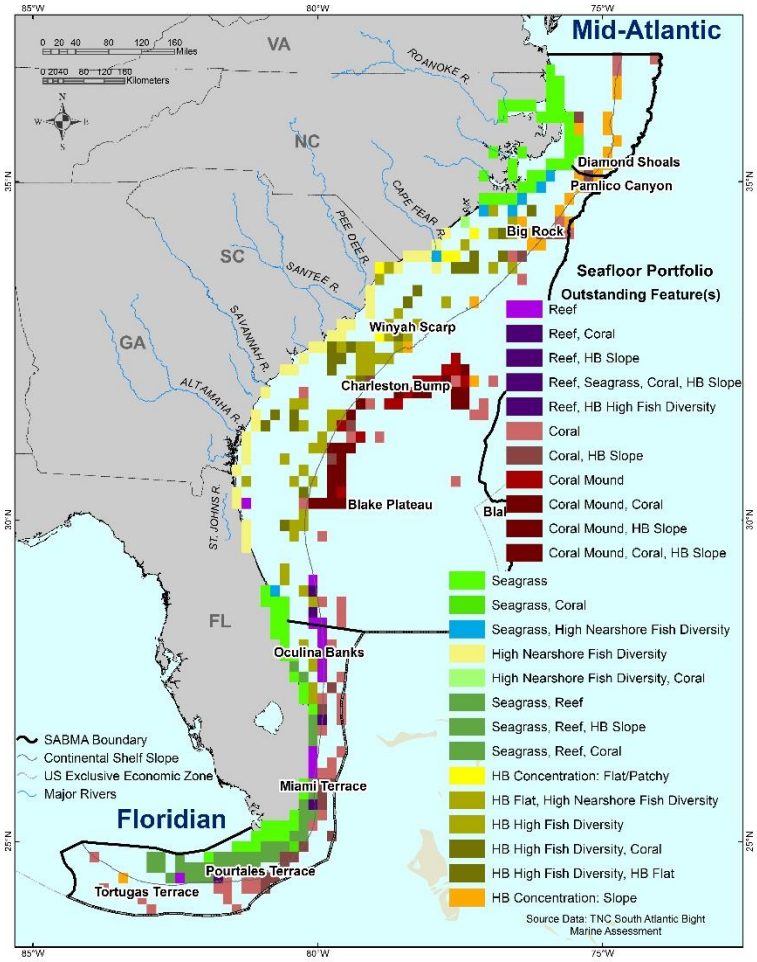
Seafloor Portfolio: Outstanding Feature(s)



Data Sources: See hardbottom, reef, and soft-bottom data described on the previous slides. Refer to the SABMA seafloor and portfolio chapters for additional details and information.

Years: 1960's – 2014

Dataset Description & Methods Overview:

This dataset identifies a portfolio of priority conservation areas for species and habitats associated with the seafloor of the South Atlantic Bight. The goal was to identify places of high biodiversity or ecological importance that collectively represent the full range of seafloor habitats. Detailed information on seafloor features, data sources, and data processing steps used to map the features may be found in the associated seafloor and portfolio chapters.

The final seafloor portfolio with outstanding features shows the type of outstanding features found in each TMS. It combines the information from all eight individual queries (hardbottom with high fish species diversity, hardbottom with confirmed cold water corals, coral mounds, hardbottom concentration areas: flat/patchy, hardbottom concentration areas: slopes, coral reef, unconsolidated sediment with seagrass, and unconsolidated sediment with high nearshore fish diversity) to identify the full array of exemplary areas that support the diversity of the region. It consists of 381 TMS across all three seafloor target habitats: 1) rock substrates, 2) coral substrates, and 3) soft-bottom substrates (unconsolidated sediments). Important areas include:

- The nearshore regions seaward from the major river mouths
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