

Northeast Area Monitoring and Assessment Program (NEAMAP) Near Shore Trawl Survey: The Atlantic States Marine Fisheries Commission, Virginia Institute of Marine Science, and *F/V Darana R*

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The Atlantic States Marine Fisheries Commission (ASMFC) initiated the development of the NEAMAP Near Shore Trawl Survey in 1999. This new survey was originally intended to supplement the sampling efforts of existing state and Federal (NOAA, Northeast Fisheries Science Center - NEFSC) trawl surveys operating in the inshore waters of the Mid Atlantic Bight, specifically from New York to North Carolina. A short time later, the NEFSC announced that they would be replacing their current vessel with a with a larger boat, the *FSV Henry B. Bigelow*, and that they would no longer sample the shallower coastal waters due to the draft of the new vessel. This announcement intensified the need for NEAMAP, as the role of this survey had changed from

collecting supplementary fisheries data to gathering data from an area that would otherwise go unsampled in the near future. The Virginia Institute of Marine Science (VIMS), an agency of the Commonwealth of Virginia, was contracted by the ASMFC to conduct the pilot cruise for the ASMFC's NEAMAP Survey in the fall of 2006. The effort was deemed a success.

Since the conclusion of the pilot cruise, the spatial and temporal extent of NEAMAP's sampling efforts have expanded. The survey, which began full scale sampling in the fall of 2007, now operates from Martha's Vineyard, MA to Cape Hatteras, NC. Sampling in Block Island and Rhode Island Sounds extends from the western shores of Martha's Vineyard to the boundary between Block Island and Long Island Sounds, and between the 60' and 120' depth contours. Sampling from Montauk, NY to Cape Hatteras is bounded by the 20' and 60' contours. A total of 150 sites are sampled in this survey area during each of two annual cruises (spring and fall). When investigating vessel options, it was determined that the contracting of a commercial boat would be the most economical

choice. To date, all sampling has been conducted aboard the *F/V Darana R*, a commercial dragger owned and operated by Captain James A. Ruhle of Wanchese, NC. This cooperative effort has proven quite successful; Captain Ruhle and his crew are responsible for vessel handling and fishing operations, while VIMS personnel lead all sampling and data collection.

At each sampling site, the sampling gear is towed along the bottom at approximately 3.0 knots for 20 minutes. The gear includes a three-bridle, four seam trawl along with a set of Thyboron, Type IV 66" doors. Doorspread, wingspread, and headline height sensors are used to monitor the configuration of the gear in near real-time. This gear package was designed by the National Marine Fisheries Service's Trawl Survey Advisory Panel along with Reidar's Manufacturing Inc, Superior Trawl, and Trawlworks, and is very similar to that which will be used by the NEFSC's *FSV Henry B. Bigelow*. \

Each catch is sorted by species and, if distinct modal groups are evident, by size. Aggregate weights are then recorded for each size-group of each species, and individual length measurements are recorded for all fishes and invertebrates. Additional information is taken for species of management interest. For each of these, a subsample of individuals is removed from each catch and taken to the onboard processing laboratory, which is set up in the fish hold of the *F/V Darana R*. In the laboratory, scientists record the individual length and weight of each fish. Each specimen is then dissected, and sex (male or female) and maturity stage (immature, spawning, spent, resting) are determined. The stomach of each fish is removed for diet analysis, along with the most appropriate structure for ageing (usually the otolith, or earbone, but sometime vertebrae). With these data, NEAMAP can produce relative abundance, length-frequency, growth, sex ratio, maturity, diet, and age structure information (to name a few) for a wide variety of species.

Species commonly sampled by the survey include scup, summer flounder, winter flounder, black seabass, Atlantic croaker, spot, weakfish, butterfish, loligo squid, skates, and spiny dogfish, among others. To date, NEAMAP has sampled over 150 species of fishes and invertebrates. As this survey moves forward and establishes a time series of data, it is expected the information generated by this program will be incorporated into fisheries management by the ASMFC, the Mid Atlantic Fisheries Management Council, and the New England Fisheries Management Council.