

# Juvenile Striped Bass Survey



• Seine Survey Seining on the Rappahannock River



• Catch-of-the-day Various sized Young of the Year (YOY) striped bass (*Morone saxatilis*) Photo by Chr



Collecting data Measuring fish on the Rappahannock River Photo by Chris Davis



Surveying Seining on the Rappahannock River. Photo by Chris Davis



Measuring fish at a station on the Pamunkey River.



Deploying the seine on the Rappahannock River.

The striped bass (*Morone saxatilis*) is one of the most sought-after commercial and recreational finfish in Chesapeake Bay. The Virginia Institute of Marine Science (VIMS) initiated the juvenile striped bass seine survey in 1967 to monitor the abundance of this important resource. The survey was terminated in 1973 when federal funding was discontinued. As population levels declined in the 1970s, concern about striped bass rose, and in 1980, funding was reinstated.

This research program generates the second-longest continuous striped bass index in the United States; an index of abundance has now been calculated every year since 1980. This index is part

of a coast-wide sampling program of striped bass recruitment conducted from New England to North Carolina under the coordination of the Atlantic States Marine Fisheries Commission (ASMFC); the VIMS index and others like it are valuable tools used in the formation of ASMFC management regulations.

#### **Objective**

The primary objective of the survey is to monitor relative annual recruitment success of juvenile striped bass in the spawning and nursery areas of lower Chesapeake Bay by developing an [annual index of abundance](#) for each year class. Estimates of young-of-the-year abundance derived from catch data help evaluate the health of a stock, and are used in predicting future commercial and recreational fish abundance. The survey also generates indices of abundance for a number of other recreationally, commercially, and otherwise ecologically important species.

Specific goals of the program are to

- Measure the relative abundance of young-of-the-year striped bass in the James, York, and Rappahannock river systems
- Quantify environmental conditions at the time of collection
- Examine relationships between juvenile striped bass abundance and measured or proxy environmental and biological data

#### **Field sampling**

Currently, the survey samples waters from 18 historically sampled sites (index stations) and 22 auxiliary sites along the shores of the James, York, and Rappahannock rivers. Addition of the auxiliary sites was made to provide better geographic coverage and, once a sufficient time series of data is developed, to create larger sample sizes within river systems so that trends in juvenile abundance can be meaningfully monitored on a system-by-system basis.

Field sampling is conducted during 5 approximately biweekly sampling periods from July through mid-September. At each station, collections are made by deploying a 100 ft. (30.5 m.) long, 4 ft. (1.22 m.) deep, 1/4 in. (0.64 cm.) bar mesh minnow seine perpendicular to the shoreline (either until the net is fully extended or a depth of approximately four feet is encountered) and then leaving the onshore brail in a fixed position while pulling the offshore end downcurrent and back to the shore, resulting in the sweeping of a quarter-circle quadrant.

In the case of index stations, all fish taken during the first tow are removed from the net and held in water-filled buckets until after the second tow. All striped bass and a sub-sample of at least 25 individuals of other species are measured to the nearest millimeter fork length (or total length if appropriate). All fishes captured, except those preserved for life-history studies, are returned to the water at the conclusion of sampling. Counts are taken of other species after 25 individuals are measured. Atmospheric and station data are recorded: salinity, water temperature, pH, dissolved oxygen, sampling time, tidal stage, and weather conditions.