Atlantic Menhaden Technical Committee
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Technical Committee Report

Meeting Participants:

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The Atlantic Menhaden Technical Committee determined the following research priorities to examine the possibility of localized depletion of Atlantic menhaden in the Chesapeake Bay.

A. Determine menhaden abundance in Chesapeake Bay

The Technical Committee recommended a two-year pilot study of a LIDAR survey be conducted in Chesapeake Bay to examine feasibility of determining abundance in the bay. This study will be designed to estimate abundance, distribution and biomass of Atlantic menhaden in a region. The study will take place over two years and two seasons, for a total of four surveys. This pilot study will allow the gathering of basic data to shape the procedure for long term monitoring. The long term study would not only include the Chesapeake Bay but should be used as a coast wide survey for use as an index in the single species and multispecies models. The first year of the LIDAR pilot study would include sampling resolution, evaluate gear performance, and ground truthing. During the second year, researchers will design protocol and obtain samples. At least some of the surveys should take place while the fishery is operating, to provide some of the ground truthing. Acoustic surveys should run concurrent with the LIDAR survey to provide additional ground truthing data.

Cost Estimate: Approximately $550,000 for two year pilot study

B. Determine estimates of removal of menhaden by predators

The Technical Committee recommended a two-year pilot study using current state and federal Fishery Independent surveys. These surveys should focus on and quantitatively evaluate stomach contents and consumptions of key prey species by predators.

Cost Estimate: Approximately $100,000 per state per year

C. Exchange of menhaden between bay and coastal systems

The Technical Committee believes that the short and long term exchange rates between Bay coastal residents is very important in determining the overall effect of menhaden harvest. They identified three studies, which might aid in determining these exchange rates. These studies include;

- a coded micro wire tagging study.
- an otolith microchemistry study
- a Morphometrics study similar to thecoded micro wire tagging study was conducted by NMFS in Beaufort, NC until the 1980's. Resurrecting these methods may prove useful and cost efficient means of answering this particular issue. Also otolith microchemical analysis was recently conducted on Chesapeake Bay weakfish populations and has proved very useful. NMFS, Woods Hole is currently conducting a Morphometrics study on Atlantic herring to examine mixing between stock components.

The Technical Committee recommends a pilot study to examine otolith microchemistry as a tool; and perhaps longer term research if the technique proves useful. Morphometrics and tagging studies should also be explored as possible research methods.

Cost Estimate Cost of creating the new database for the striped bass tagging program was $20,000. The cost to run the reward program was $60,000, a GS- 5 level salary for a clerk to answer phones and send out rewards and $41,000 for a database manager. An Atlantic menhaden tagging study would have similar costs. The cost estimate for the micro wire tagging study is approximately $150,000 per year. Estimates for otolith microchemistry and morphometrics are currently unavailable and will require input on scope of each particular study. However, estimates of ongoing and past research my shed some light on the expected costs.

D. Larval Studies (determining recruitment to the Bay)

An early juvenile stage index conducted by trawl in low salinity sections of estuaries may be the most prudent and cost effective way to investigate. However, timing is critical. VIMS does larval striped bass survey and there is the potential of adding to existing surveys.

Recommendation: conduct survey at the mouth of the Bay from February through August, every two weeks. A similar study was recently shelved at NMFS in Beaufort and continues at the Rutgers field station located in Tuckerton, NJ

Cost Estimate: Approximately $300,000 per year.

The Atlantic Menhaden Technical Committee questioned whether studies should be conducted in Chesapeake bay only or as part of concerted coast wide effort. While current interest is focused in on the Bay, broadening the scope of research may have benefits not only for other systems but also on the bay itself given the migratory nature of the species involved.