

**Atlantic Menhaden Technical Committee
Meeting Summary**

**April 12, 2007
Laurel, Maryland**

Attendees

Committee Members:

Behzad Mahmoudi, (FL)
Brandon Muffley (NJ)
Alexei Sharov, Chair (MD)
Jason McNamee (RI)
Derek Orner (NOAA)
Rob Latour (VIMS)

Gary Nelson (MA)
Joseph Smith (NMFS)
John Maiolo (NC)
Douglas Vaughan (NMFS)
Trish Murphey (NC)
Brad Spear, Staff (ASMFC)

Guests

Approximately 14 guests attended. No attendance sheet was circulated.

Review of 2006 Menhaden Fishery

The coastwide menhaden landings for reduction in 2006 were 157,385 metric tons; this was 7% greater than landings in 2005 (146,860 mt) and 13% below landings for the previous 5-year average (180,833 mt). Removals for reduction from Chesapeake Bay were down in 2006 (approx. 65,000 mt) from recent years (approx. 95,000 mt and 98,000 mt in 2004 and 2005, respectively). Catches for reduction from Chesapeake Bay in 2006 were the lowest in the 1985-2006 time series in which menhaden logbooks are available.

As in 2005, Omega Protein in Reedville, VA (with 11 vessels), was the only menhaden reduction plant operating on the Atlantic Coast in 2006; Beaufort Fisheries, Inc., in North Carolina has not operated since the 2004 fishing season. Probably due to the warm winter of 2005-06, menhaden appeared as far north as Massachusetts in May 2006. Menhaden were in good abundance along the Delmarva Peninsula, New Jersey and southern New England from June through October. Catches by the reduction fleet off New Jersey in 2006 were the highest since 1995 (when 52,100 mt were caught off the Garden State), and ranked second for the 1985-2006 period. Although catch data on menhaden-for-bait off New Jersey for 2006 are incomplete at this time, preliminary data suggest 2006 landings were up over landings in 2005. Similarly, catches by the Virginia reduction vessels in the ocean off the Delmarva Peninsula (DE, MD, and VA Eastern Shore) were the greatest since 1997 when 60,500 mt were caught.

This is the second summer that adult menhaden were abundant off southern New England. Ark Bait Co. of Swansea, Massachusetts, with one purse-seine-for-bait vessel fished primarily in waters off southern New England during 2006. For about 7-8 years prior to 2005, Ark Bait Co. fished mainly in ocean waters off central and northern New Jersey. Ark Bait's fishing activities in Narragansett Bay in 2006 seemingly have precipitated a bill in the Rhode Island legislature to prohibit purse-seining for bait in the Bay.

Fishing patterns by the VA reduction fleet in 2006 were atypical of recent years. Fish were scattered and fishing was poor in Chesapeake Bay during May-June and September-October. Best fishing in Chesapeake Bay occurred during July-August. In late May, VA vessels fished off New Jersey, the earliest they have fished off the Garden State since the early 1990s. Good catches off New Jersey continued through summer and fall. November was windy and early December was foggy; ocean catches were correspondingly down. Catches in the ocean off Virginia Beach improved in mid-December, and last sets for the season occurred on January 3. As the Virginia fleet did not fish south of about Sandbridge, VA, 2006 is the first fall fishery in probably over a century that no purse-seine sets occurred off the North Carolina Outer Banks. Winter 2006-07 was also relatively mild. Reports from several other fisheries active during the winter suggest menhaden were abundant January through March near the mouth of Chesapeake Bay.

The catch-at-age matrix for menhaden from Chesapeake Bay indicated that in 2006 age-1 menhaden comprised 46% of the catch, and age-2 fish comprised 44%. This suggests the 2005 year class of menhaden is relatively strong, and should be well represented in Chesapeake Bay and the Mid-Atlantic areas as age-2's in 2007.

Menhaden-for-bait landings in 2006 are incomplete, however, as reduction removals from Chesapeake Bay were down in 2006, so too were bait removals. Preliminary reports indicate menhaden-for-bait landings by purse seine in Virginia ("snapper rigs") were about 9,000 mt in 2006; this is down from about 19,000 mt in 2005.

Addendum I requires the TC to review each year's fishery against a set of 'triggers'. If both triggers were fired, the TC would be required to initiate an assessment if one is not underway. Trigger #1 is fired if "the CPUE index [thousands of metric tons / vessel-weeks] falls below the 5th percentile for the past 20 years"; trigger #1 was not fired for 2006. Trigger #2 is fired if "the ratio of ages 2-4 to the total catch of all ages falls below the second standard deviation unit over the last 20 years"; trigger #2 was not fired for 2006.

Brandon Muffley is compiling bait landings and will solicit that information from states. As Joe Smith does for the reduction fishery, Brandon will report back to the TC on a summary of bait landings by state and gear.

Spotter Plane Logbooks for Developing a Coastwide Index of Abundance

Joe Smith obtained and reviewed Omega Protein's (VA) spotter plane logbooks to explore the possibility of using them as part of a coastwide index of abundance. A similar methodology was used to estimate abundance in the Pacific sardine fishery in the 1970s. He presented a relative index of abundance for several areas between Atlantic City, New Jersey, and Cape Hatteras, North Carolina. Logbooks were available for only 2006 so the analysis presented a snapshot of abundance. Omega's plant manager agreed to provide the spotter plane logbooks for 2007. Suggestions from the TC included incorporating search time into the analysis and complementing the analysis with actual catches/sets from industry vessels. Ark Bait (MA) mentioned to RI that it has available historical spotter plane logbooks.

The TC agreed on several points. The current form of the logbooks and the information recorded are not scientifically defensible. The logbooks and observations were not intended to serve such a purpose. However, the TC sees aerial surveys for menhaden as the most cost-effective method to measure abundance. John Maiolo suggested the addition of an ethno-methodological approach, involving the pilots, so as to capture their experience in a way to enhance a study design to efficiently gather scientifically defensible data.

Cooperative Research

At the August 2006 TC meeting, members discussed possible research needs that may be met through cooperative research. Industry reaffirmed its interest in assisting with data collection by offering available resources (i.e. vessels, fish samples, spotter plane logbooks).

As noted in the previous section, aerial surveys provide the most realistic opportunity to obtain a coastwide abundance index, particularly of adults. Omega Protein representatives offered their pilots and captains to share information on their spotter planes and unique knowledge of seeking out fish from the air. Ark Bait's spotter pilot has also expressed interest in participating in a coastwide aerial survey.

The TC recommended the formation of a subcommittee to meet with industry representatives to explore possible cooperative research projects. Specifically, the subcommittee will try to speak with spotter pilots (from Omega and Ark Bait) and vessel captains to, first, better understand their behavior in searching for and harvesting menhaden and, second, explore the feasibility of implementing a scientifically defensible aerial research survey that could be used as a coastwide abundance index. The subcommittee will also discuss other possible cooperative research projects that can be initiated throughout the range of the fishery. While the TC agreed that scientists and industry should work cooperatively on some research projects, there are many other projects that cannot be or don't need to be conducted with industry participation. The subcommittee is expected to meet before the next TC meeting and will report back at that meeting.

John Maiolo suggested the need to update ethnographic studies of the menhaden industry. He noted that the industry has changed drastically since the last comprehensive study was conducted, e.g., there is now only one surviving company. Three purposes would be served by this kind of work: 1) the industry has a distinguished history chronicled by three books, the latest by Barbara (Garrity) Blake (1995). Recent drastic changes in regulations and industry structure, and their impacts on the work force and communities (e.g. Beaufort NC) require an update to the history for its own sake; 2) research on socioeconomic changes in the industry structure are mandated by FMP and peer review guidelines; 3) updated information on impacts and resulting socio-economic changes will enhance management of the industry.

Several committee members noted that Omega Protein already cooperates at a very high level by providing near real-time landings data, fish samples, and vessel and spotter plane logbooks. Omega representatives informed the TC of a proposal it submitted to NOAA's Chesapeake Bay Office to set up a VMS program to report real-time catch data and various oceanographic data.

Other Research/Surveys

Brandon Muffley looked into NJ's trawl survey data for menhaden encounters. He has put together an analysis and will present it to the TC at its next meeting.

Power plant impingement data from plants, including Brayton Point power plant, might also be a source of index data. Flow volume data is needed to standardize the data. Inconsistency of data is an issue that would need to be addressed.

Rob Latour will look into encounters of menhaden with the NEAMAP survey.

NCBO Fisheries Symposium

NOAA Chesapeake Bay Office hosts an annual fisheries symposium to highlight the latest research being conducted that includes the Chesapeake Bay. At the 10th annual symposium this year, Day 2 was focused on the research priorities listed in Addendum II. Many of the TC members attended the session and discussed the research at this meeting.

The first research focus area is menhaden abundance in Chesapeake Bay. The TC led off by discussing the latest coastwide assessment that does not provide area specific analyses and results. That discussion is summarized in the section below. The group discussed the Light Detection and Ranging (LIDAR) study. It is expected to be conducted for its second year in 2007. . The results of the first year indicated that LIDAR is able to detect schools of menhaden, but its detection abilities are limited by the penetration depth. A survey of Chesapeake Bay population will be designed and implemented during the second year of the study. If successful, this survey may provide an index or a minimum point estimate of number of menhaden schools in Chesapeake Bay. If the survey is proved to be successful and continued in the future, it could provide estimates of abundance and might be useful for the assessment in the long term.

The next research focus area is estimates of removals of menhaden by predators. There were several diet studies presented at the Symposium. They showed very different results. However, this is to be expected given the different methodologies used and different areas/times sampled. To be most useful, existing methodologies should be standardized and data from past studies should be reanalyzed. The TC noted that all diet studies have limitations and care must be used in extrapolating diet data to the broader population. It also stated that the results of the studies have more direct application to the MSVPA-X than the menhaden assessment model. However, the additional data might influence the M2 (predation mortality) value and the natural mortality-vector used in the menhaden assessment.

The TC briefly talked about the next research area, exchange of menhaden between Chesapeake Bay and coastal systems. Steve Martell's model which seeks to assess the Bay sub-stock is in the exploratory phases. The TC is interested in learning more and seeing preliminary results as soon as possible. It is beginning the process of exploring alternative assessment models to determine if one should replace the current assessment model used. The TC also discussed a study on population structure of menhaden in the mid-Atlantic. It is interested in learning more once microchemistry data is available, as it might be useful for future assessments.

At this point the conversation was directed toward the lack of social science research specific to the Chesapeake Bay (economic research of the entire industry range has been proposed), and impacts of regulations on fishermen, their industry, and their communities. In response to a comment that such research is not mandated to this committee, the point was made that it is indeed mandated by FMP guidelines and peer review documents, and two social scientists have been appointed to the committee, presumably for such a purpose. Yet, the last completed work of this nature (quite modest in nature by Chevront) was completed several years ago and was industry wide in nature. While millions are being spent on the biological health of the fishery specifically to the Chesapeake, little to none has been spent on the health of the industry generally, the fishermen, their families, and their communities.

The last research focus area is larval studies to get a handle on menhaden recruitment. Information on three studies was presented at the Symposium. They were all in the early stages so only preliminary information was available. However, the three projects have the potential to better inform the TC of larvae growth and recruitment which might or might not have application to the assessment. The TC noted none of the current studies are set up to examine larval survivability, which is expensive and difficult to do.

Current and 2009 Stock Assessment

The TC began by noting the perceived limitations of the current assessment. They include the weighting scheme applied to juvenile indices, lack of adult indices, possible need to change selectivity, and outdated maturity and fecundity schedules. Generally speaking, the model provides no area specific abundance/information and cannot 'evaluate' area specific management measures. The TC's goal is to conduct an assessment that provides managers more detail on the status of sub-stocks. It is unclear at this point whether the TC will bring an updated and improved assessment using the current model to the 2009 peer review or a new model. At least two conditions must apply before the TC will utilize a new model for the 2009 assessment: 1) an appropriate model must be identified and available; and 2) adequate data must be available to run the model to produce defensible results.

Erik Williams (NMFS – Beaufort) has done work on a 'box' model that can be area specific. The TC believes it is similar to the model being worked on by Steve Martell. It encouraged the two lead modelers to get in touch and possible coordinate efforts. The TC requested presentations from both at a future meeting. Several TC members also asked for more information on surplus production models worked on by MD DNR staff. Alexei agreed to distribute documentation to the TC prior to its next meeting so it may determine if this model is something to explore further.

Vice Chair

Rob Latour was nominated and elected as Vice Chair of the TC.