



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Shad and River Herring Management Board
Cc: Shad and River Herring Technical Committee

FROM: Shad and River Herring Advisory Panel

DATE: January 26, 2021

SUBJECT: AP Report on Assessment Results and Technical Committee Recommendations to Improve Shad Stocks

The Shad and River Herring Advisory Panel (AP) met twice via webinar on Monday, October 26, 2020 to review the results of the 2020 American Shad Benchmark Assessment, and on January 15, 2021 to review the Technical Committee (TC) recommendations for improving shad stocks. AP comments and additional recommendations are summarized below.

AP Members in attendance October 26, 2020: Pam Lyons Gromen (Chair), Alison Bowden (MA), Byron Young (NY), Jeff Kaelin (NJ), Edward Hale (DE)

January 15, 2021: Pam Lyons Gromen (Chair), Eric Roach (NH), Byron Young (NY), Jeff Kaelin (NJ), Edward Hale (DE), Ray Brown (NC)

ASMFC Staff: Caitlin Starks, Jeff Kipp, Emilie Franke

Other: Brian Neilan (TC Chair, NJDEP), Allison Colden, Patrick McGee (RIDEM), Holly White (NCDMF), Max Appelman (NOAA Fisheries), Zach Greenburg (Pew Charitable Trust)

After reviewing the results of the 2020 American Shad Benchmark Assessment, the AP reviewed the TC's recommendations to address the Board task assigned in August 2020: identify potential paths forward to improve shad stocks given the results of the stock assessment. The TC recommendations included system-specific monitoring and restoration efforts as well as coastwide recommendations.

AP Comments on October 26, 2020

The AP provided several comments related to the assessment. First, Jeff Kaelin expressed concern that shad mortality in the ocean intercept fishery is likely overestimated. He suggested incorporating data from the shoreside monitoring program performed by the Massachusetts Department of Marine Fisheries in the next assessment to improve information on ocean bycatch.

Ed Hale inquired about the availability of genetic data to characterize stock composition in the Delaware Bay mixed-stock fishery and coastwide. Staff acknowledged that while there have been more efforts to collect genetic data in the Delaware system, historical data is not available to assess how the stock proportions in the Delaware Bay fishery have changed over time, and that the US Geological Survey is starting a project to establish a genetic repository for alosines along the Atlantic coast.

In addition to genetic data, AP members noted several other data gaps they feel are creating big sources of uncertainty for the stock assessment: recreational landings information, bycatch in inshore and coastal fisheries, and environmental information like climate, streamflow, and water quality. For example, Allison Bowden commented that in New England significant droughts have caused water in a number of productive systems to be held back for water supply, which in turn means the fish are unable to emigrate from the systems. Streamflow has a big effect on shad and should be considered as a factor contributing to depletion.

Specific to the Delaware Bay, Ed Hale commented that he thinks the surveys used to estimate mortality in Delaware Bay had some serious issues. The Smithfield Beach Gill Net Survey is used to harvest broodstock for a Pennsylvania stocking effort that has inconsistent levels of effort and targets females, and the Lewis Haul Seine Fishery is more of an ecotourism effort than a scientific mission. The Lehigh River Electrofishing Survey occurs on a dammed river at two locations > 2.5 miles upriver on a single day in mid-June. Therefore he felt these surveys did not do an effective job in providing information worthy of assessing mortality or stock status.

Related to the TC recommendations, the AP members on the call supported the TC approach to developing system-specific recommendations, but noted that some recommendations at the coastwide level should also be considered such as genetic sampling of ocean bycatch. The AP also supported the TC's ongoing efforts to identify monitoring gaps and recommend changes to the monitoring requirements under Amendment 3. They highlighted the need for better information on inshore bycatch and juvenile mortality, which could be impacting the stocks.

Pam Lyons Gromen noted that in the assessment report shad were classified as highly vulnerable to climate change, and she would like to see recommendations on how management can address this issue.

AP Comments on January 15, 2021

AP members provided comments on the TC recommendations for both individual shad stocks as well as the coastwide recommendations. In response to the TC recommendation that paired otoliths and scales be collected in all systems where it is possible, Ed Hale commented that the TC should better define sampling targets for various data sources (i.e. specific stocks, fishery-independent vs -dependent surveys), in order to ensure enough otolith sampling can be completed to meet the needs of the stock assessment.

Related to the recommendation for stock composition sampling of mixed-stock fisheries and offshore bycatch, Jeff Kaelin recommend that the commission reach out to the Northeast Fishery Observer Program (NEFOP) to ask that they prioritize sampling of shad in federal fishery bycatch. He mentioned that NEFOP is usually open to recommendations on where to focus sampling, and that there will be increased opportunities for sampling from boats with requirements related to video monitoring.

Ray Brown expressed concerns that additional information for the Tar-Pamlico and Cape Fear systems could have been included in the assessment and he believes there is enough information to make a stock assessment determination. However, Ray commented that he can accept the TC recommendation for no changes to management, as long as no additional fishing pressure is added. A North Carolina Division of Marine Fisheries staff member who was on the webinar clarified that

all available information from North Carolina were provided for the assessment, but some data did not meet the criteria defined by the Stock Assessment Subcommittee to allow calculation of mortality rates for adults or juveniles for recent years.

Byron Young supported the recommendations for the Hudson River. He mentioned he is concerned about the idea of controlling offshore bycatch, because he is not sure how that can be done. On the recommendation to collect otoliths, he commented that the recommendation is unclear as to whether 100 otolith samples are needed from each system, state, or coastwide. He recommended the TC clarify this point, and believes 100 samples per state would be difficult to obtain.

Ed Hale commented that in addition to echoing some of the limitations of presently used stock status metrics associated with the Delaware River FMP from the AP October 2020 call, he would like to recommend that the Delaware River Coop explore other existing monitoring surveys for potential inclusion into assessing stock status (e.g. DNREC trawl survey) and consider reprioritization (addition/deletion) of currently used indices to assess stock status in editing of their Delaware Basin FMP.

All AP members on the call agreed that the Board should support however possible the development of the United States Geological Survey (USGS) project to develop a genetic repository for alosine species, since it is clear that genetic information is a major data gap in the assessment. This project is currently in its early stages, with USGS project leads reaching out to potential collaborators who can help obtain tissue samples.

Byron Young and Pam Lyons Gromen both commented on the fact that climate impacts have not been addressed in the TC recommendations, but acknowledged that it is an issue that is likely outside the scope of the Committee. However, they feel climate is an important issue that needs to be addressed, perhaps as a research recommendation for future work and assessments. Pam also commented that the partnership and communication related to climate impacts between commission and federal partners (such as the Northeast Fishery Science Center) could be improved. In particular, there is a need to better define how information is shared between partners. There are a few climate projects, such as the mapping of temperature and American shad historic biomass distribution over time and projections of future distribution due to climate change on the Mid-Atlantic Ocean Data Portal, but it is unclear how available information is being addressed by managers. Information such as this is useful for better understanding and mitigating impacts on mixed stocks in the ocean.

Lastly, Ed Hale emphasized the need to quantify recreational effort, harvest and incidental mortality on a coastwide spatial scale, noting that state surveys and MRIP are not effective at sampling stretches of habitat (upper stretches of tributaries) where the adult fish return to spawn. Several other members agreed, and Ray Brown added that incidental by catch from all types of fishing (recreational or commercial) should be reported from all systems even if the current stock status in that system is currently deemed sustainable.