

## NEW ENGLAND FISHERY MANAGEMENT COUNCIL

### FINAL Herring Plan Development Team (PDT) Report

June 29, 2011

NMFS NERO Office, Gloucester MA

The Herring Plan Development Team (PDT) met on June 29, 2011 in Gloucester, MA to:

- Continue work on analyses related to the management alternatives under consideration in Amendment 5 to the Herring Fishery Management Plan (FMP);
- Continue to discuss the Omnibus Standardized Bycatch Reporting Methodology (SBRM) amendment/methodology and relationship to the observer coverage alternatives under consideration in Amendment 5;
- Review updated analyses related to the observer coverage alternatives and develop Herring PDT recommendations;
- Review the Draft Affected Environment section for Amendment 5; and
- Review and discuss information and analyses related to management measures to address river herring bycatch.

**Meeting Attendance:** Lori Steele, PDT Chairman; Talia Bigelow, NEFMC Staff; Matt Cieri, Jon Deroba, Tim Cardiasmenos, Sara Weeks, Micah Dean, Jamie Cournane, Min-Yang Lee, Madeleine Hall-Arber, Carrie Nordeen, Lindsey Feldman, Aja Szumylo, Rob Vincent, Jamie Cournane; Steve Correia (via Webinar) (Herring PDT Members); Jason Didden (MAFMC); Mary Beth Tooley; Dave Bethoney (SMAST); Dave Ellenton (Cape Seafoods, Herring AP Chairman), and several other interested stakeholders (via Webinar).

After a brief round of introductions, Ms. Steele provided a brief update to the Herring PDT regarding the status of Amendment 5 development. She also identified the primary issues for the PDT to address at this meeting – alternatives to allocate observer coverage on limited access herring vessels, and preliminary analysis of the river herring management alternatives in Amendment 5. Ms. Steele encouraged the PDT members to focus on technical and analytical issues at this meeting, given time constraints and the extent of work to be completed.

#### ***Alternatives Under Consideration to Allocate Observer Coverage on Limited Access Herring Vessels***

Ms. Steele walked the Herring PDT through a draft of the analysis/discussion of impacts that she is developing for the Amendment 5 Draft EIS. The Herring PDT briefly discussed the elements of the alternatives under consideration: (1) no action; (2) 100% coverage; (3) require SBRM coverage levels; (4) allocate observer coverage based on Council-specified targets; and a possible fifth alternative to modify the SBRM. Much of the discussion that has been drafted thus far addresses the SBRM (status quo) and clarifies its relationship to Amendment 5 and the limited access herring vessels (Categories A, B, and C).

The Herring PDT discussed several elements of the analyses, still to be completed:

- Timing issues – The Herring PDT discussed the timing of the SBRM prioritization process and SBRM Annual Report. Ms. Steele agreed to further develop the options in the document that require a supplemental analysis to be provided to the Council concurrently with the SBRM review (to address the Council-specified priorities in Amendment 5).
- 100% observer coverage – The PDT generally discussed the “diminishing returns” associated with very high levels of observer coverage, i.e., a significant cost for a marginal benefit (in terms of improving CVs on bycatch estimates). The PDT agreed that providing a herring-related figure similar to the groundfish figure in the SBRM Report would be helpful to illustrate this point; this will be added to the analysis.
- “Herring NK” and “Fish NK” – The PDT will clarify in the document that fish that observers mark as Herring NK or Fish NK are not used in the numerator (discards) for estimating the ratio unless the species is identified. These fish are only utilized in the denominator (all kept catch) if they were brought on board the vessel. Herring NK and Fish NK that were discarded and not identified to species are not utilized in the SBRM analysis. The PDT will provide a description in the document of how/why observers have recorded Herring NK and Fish NK in the past.
- Possible Alternative to Modify SBRM – This alternative is being discussed very generally to address some of the Council’s priorities identified in Amendment 5, i.e., accurately estimating catch (including discards and landed bycatch) for species like river herring in the Atlantic herring fishery. One approach may be to modify the SBRM methods to achieve these goals/objectives. The elements of this alternative, however, are not clear, and the PDT agreed that the alternative requires additional discussion, as this action may require an omnibus amendment and/or include elements beyond the scope of Amendment 5. Council staff will meet with NEFSC biologists prior to the next PDT meeting to discuss any possible approaches that could be considered in Amendment 5 to amend the SBRM to address the Council’s priorities. It is unlikely that a fifth alternative will be developed if it requires action outside of Amendment 5; this is an issue that the Council may want to pursue on a different time frame.
- Relationship of SBRM “Fleets” to Limited Access Herring Vessels – The Herring PDT agreed that relating the SBRM fishing fleets to the limited access herring vessels to which Amendment 5 measures apply is extremely challenging, as there is no direct linkage between the two because of the way data are stratified in the SBRM. The SBRM is an optimization tool that identifies 52 fishing “fleets” stratified by:
  - Quarter (based on date landed);
  - Geographic Region (NE/MA based on port of departure);
  - Gear Type (based on *negear*, single/pair midwater trawl are combined);
  - Mesh Size (>5.5”< for otter trawl and three groups for gillnets);
  - Access Area (AA and OPEN); and
  - Trip Category (General Category/limited access Scallop).

Consequently, the SBRM fleets do not align with any specific FMP-managed fleets, i.e., the limited access Category A, B, and C herring vessels. Purse seine and midwater trawl trips appear to be adequately covered by the SBRM approach (although these gears also operate in fisheries other than the herring fishery); the bigger challenge is relating the SBRM small mesh bottom trawl fleets to the limited access herring vessels. The “common currency” between the datasets used in the SBRM analysis and the PDT analysis is the fishing trip; the PDT agreed that it would therefore be worthwhile to investigate what proportion of Category A/B/C trips were taken when declared in and out of the herring fishery during the 2010 fishing year. Examining the proportion of 2010 A/B/C trips that were covered by the SBRM methodology will provide a basis for linking the fleets for the following year, following the assumption embedded in SBRM that the following year’s fleet/effort will be similar to the previous year. Council staff agreed to explore this issue further and provide additional information for the next meeting.

Dr. Cieri presented the results of his analysis related to Alternatives 3 and 4, which illustrates the kind of analysis that can be conducted to supplement the SBRM analysis and provide information about additional observer days that may be required to achieve the target CVs of 20% for river herring and 30% for haddock (previously identified by the Council as priorities for Amendment 5). Dr. Cieri’s analysis utilizes approaches similar to the SBRM but instead focuses on total removals of the species, not just discards (Discards/Kept becomes Catch/Kept in this analysis). The supplemental/illustrative analysis incorporates river herring and projects coverage levels to achieve CVs for total river herring removals, based on the Council’s priorities for this amendment. Dr. Cieri provided estimates of 2010 removals of haddock and river herring, as well as Atlantic herring discards; the analysis also projects the number of observer days for the following year (2011 in this example) based on the previous year’s (2010 in this example) observer data for Category A, B and C (limited access) herring vessels on trips declared into the herring fishery. The data are not stratified by season (due to sample size), and the geographic stratification differs slightly for each of the species.

Overall, the analysis shows that 2010 observer coverage rates on limited access herring vessels were relatively high, particularly for some gear/area strata; resulting (expanded) estimates of removals have lower CVs associated with them than in the past (i.e., the estimates are more precise). Estimated removals of river herring by the limited access herring vessels during 2010 was 164,862 pounds, with a CV of 0.36. Haddock removals in 2010 were estimated at 222,111 pounds, with a CV of 0.28. Atlantic herring discards were estimated at 367,194 pounds, with a CV of 0.20. Therefore, it appears that coverage levels in 2010 were high enough to achieve the Council’s targets for haddock removals and Atlantic herring discards (0.30), and high enough to improve the precision associated with the estimate of river herring removals for this fleet. Dr. Cieri posed several questions for the Herring PDT to discuss/address so that he can complete the analysis:

- ME DMR has data collected by an at-sea monitor (ASM) for five small mesh bottom trawl trips that were covered through grant funding in 2010; the ASM was instructed in NEFOP sampling protocols but was not fully certified by the NEFOP. In the future, the data will be incorporated into the NEFOP database while distinguishing it from data collected by NEFOP observers. For this analysis, however, the Herring PDT agreed that these data should be included by Dr. Cieri to reduce the variability associated with low sample sizes for the small mesh bottom trawl strata.
- The Herring PDT agreed that “pilot coverage” levels should be recommended for strata/cells that have little to no coverage at this time; the PDT recommends a pilot level of 5% or a minimum number of three observed trips, whichever is less.
- The PDT recommends that the analysis include the SBRM importance filters to illustrate which strata contribute little to discards or mortality but may require high levels of observer coverage due to the variability resulting from the catch estimates. This will help the Council to better consider trade-offs when allocating additional observer days to the herring fishery.
- In order to “combine” the analyses, the PDT agreed to base recommendations for allocating observer days/trips on the proportion of trips that occurred in an area during the previous year. For example, Statistical Area 521 is stratified for river herring removals, but this only represents part of the area for Georges Bank haddock removals. When recommending observer trips, the proportion of trips in Stat Area 521 can be used to approximate the proportion of Georges Bank total trips that should occur in 521, to achieve the targets for both Georges Bank haddock and river herring. This is somewhat complicated but will help to provide the target levels of coverage that the Council has identified as priorities in this amendment, recognizing that these are target levels and not absolute requirements.

Dr. Cieri agreed to write up the methodology and results of the analysis for the next PDT meeting, as the PDT will develop related recommendations for the Amendment 5 EIS document. The PDT agreed that the document should emphasize that this is an example/illustrative analysis to help the Council determine coverage levels to achieve its targets. It is important to understand that the analysis serves as a forecast for the upcoming year; the results will differ from year to year, depending on the previous year’s coverage levels and available information.

### ***Draft Affected Environment for Amendment 5***

Ms. Bigelow walked the Herring PDT through the draft Affected Environment (AE) section for Amendment 5. The AE will likely be a stand-alone document (Volume II of the Draft EIS) with a detailed Executive Summary included in the main EIS document. It will serve as the primary source/background document for the Amendment 5 analyses and will update all available stock and fishery-related information related to the Amendment 5 alternatives and their potential impacts. The AE provides information related to five valued ecosystem components: (1) Atlantic Herring; (2) Non-target Species and Other Fisheries; (3) Physical Environment and Essential Fish Habitat (EFH); (4) Protected Resources; and (5) Fishing-Related Businesses and Communities. Madeleine Hall-Arber briefed the PDT on her work to update the community profiles for the AE. During a brief discussion, the Herring PDT suggested the following:

- Include the section with a summary of Bolles' thesis work on the stock structure of Atlantic herring, with a caveat that stock structure will likely be explored in future assessments;
- Include a summary of the NMFS trawl surveys once the NEFSC has determined the correction factors for the new R/V Bigelow data;
- Note in the AE that the length frequencies generated by the ME DMR and MA DMF inshore surveys likely serve as recruitment indices;
- Acknowledge the relationship between tuna and herring and the importance of herring as a forage for tuna, but clarify that a direct linkage between Atlantic herring biomass and tuna abundance has not been determined;
- Include information on the importance of recreational fisheries to New England;
- Update information regarding the New Brunswick weir fishery through 2011; and
- Improve the structure of the document in the section that addresses the importance of herring as a forage species.

Council staff intends to complete the Amendment 5 draft Affected Environment sometime during August 2011 so that this document can be distributed in advance of the rest of the Draft EIS for Amendment 5.

### ***Analysis of Management Measures to Address River Herring Bycatch***

Jason Didden from the Mid-Atlantic Fishery Management Council reviewed a preliminary analysis of river herring and shad incidental catch estimates provided by the NEFSC to assist in the development of Amendment 14 to the Mid-Atlantic Council's Squid, Mackerel, and Butterfish FMP. The next steps for the Mid-Atlantic Council's FMAT (Fishery Management Action Team, similar to the Council's PDT) will be to break down the data by mesh size and begin to try to identify which trips represent directed mackerel trips so that the group can gain some perspective on the nature and extent of bycatch in the mackerel fishery. The FMAT is also trying to develop survey indices for blueback herring, alewife, and American shad to evaluate longer-term trends in abundance. Mr. Didden briefly summarized progress to date on the development of management alternatives for Amendment 14 and suggested that the current timeline for completing the amendment would likely be extended.

Min-Yang Lee and Jamie Cournane presented their methods and preliminary work on analyzing the biological and economic impacts of the management measures under consideration in Amendment 5 to address river herring bycatch. Dr. Lee's work uses 2008-2010 fishery data (VTR, VMS, observer) to develop two predictive models, which will evaluate (1) if/when river herring catch triggers may be reached; and (2) the relative costs/impacts of spatial closures, i.e., closing an area to the limited access herring fishery for some period of time. Dr. Cournane's analysis utilizes fishery-independent data (survey data) combined with fishery data to evaluate the relative potential benefits to the river herring resource of closing a particular area to herring fishing for a period of time. Dr. Lee and Dr. Cournane intend to work together to synthesize the analysis and evaluate the potential costs/benefits of the management measures under consideration in Amendment 5 to address river herring bycatch. Dr. Cournane will construct a table that summarizes river herring catch/removal/discard estimates to date, as well as a matrix to generally characterize the impacts associated with each of the measures under consideration.

The Herring PDT generally supported the approaches described by Dr. Lee and Dr. Courane and agreed to review the completed analyses and develop recommendations at its August 2011 meeting.

Towards the end of the meeting, Ms. Steele updated the Herring PDT regarding the development of general analyses related to the other measures proposed in Amendment 5 (catch reporting, transfers at sea, measures to maximize sampling and address net slippage, etc.). She stated that she will draft a matrix for PDT members to fill in regarding qualitative impacts, pros/cons, and advantages/disadvantages, which she can then develop into a more complete discussion of impacts for the Draft EIS document. The Herring PDT agreed to this approach and will review the matrix and discussion of impacts at the August 2011 PDT meeting.

The Herring PDT will meet on August 10, 2011 to review analyses and continue/complete work on the Amendment 5 Draft EIS.