

Herring PDT Meeting Summaries

February 24, 2011

May 11, 2011

June 29, 2011

August 10, 2011

NEW ENGLAND FISHERY MANAGEMENT COUNCIL

FINAL Herring Plan Development Team (PDT) Report

February 24, 2011

Parker River Refuge, Newburyport MA

The Herring Plan Development Team (PDT) met on February 24, 2011 in Newburyport, MA to:

- Review/discuss the Management Alternatives Under Consideration in Amendment 5; identify outstanding questions/unresolved issues and discuss the related analyses;
- Review/discuss a general outline of the Draft Environmental Impact Statement (EIS) and agree on the valued ecosystem components (VECs) to be used for the Affected Environment and Analysis of Impacts in the Amendment 5 Draft EIS; and
- Review a draft outline of the Affected Environment section of the Draft EIS and discuss/develop plans for completing work.

Meeting Attendance: Lori Steele, PDT Chairman; Talia Bigelow, NEFMC Staff; Matt Cieri, Jon Deroba, Carrie Nordeen, Tim Cardiasmenos, Steve Correia, Micah Dean, Min-Yang Lee (PDT Members); Mary Beth Tooley; Dave Ellenton (Cape Seafoods, Herring Advisory Panel Chairman); Ben Martens (CCCHFA), Steve Weiner (CHOIR).

After a round of introductions, Council staff summarized recent Council decisions related to the development of Amendment 5 and the anticipated timeline for completing the Draft EIS document (target September 2011 Council meeting). The PDT briefly reviewed an outline of the Draft EIS and discussed responsibilities related to completing various sections.

The majority of the Herring PDT meeting was spent discussing the Management Alternatives Under Consideration in Amendment 5, focusing on outstanding issues and possible ways to approach the analyses.

- The PDT discussed the importance of being able to track herring catch that is transferred to carrier vessels clearly from the catcher to the carrier and the dealer. Reporting requirements are complicated because fish can be transferred at sea using carriers and landed/sold to multiple dealers. The Amendment 5 document will clarify that carriers are required to provide a NMFS-specified trip identifier for the catcher vessel to the dealer even if the amendment eliminates VTR reporting requirements for carrier vessels themselves. The PDT will also provide additional information in the document about the utilization of observers on carrier vessels.

Proposed Requirement for Herring Dealers to Accurately Weigh All Fish

At its January meeting, the New England Fishery Management Council voted to include the following measure in Amendment 5:

This option would require federally-permitted Atlantic herring dealers to accurately weigh all fish. For those dealers who can demonstrate that it is unfeasible to weigh the fish, an exemption will be approved by the Council.

The discussion about this option at the Council meeting suggested that the provisions in Amendment 5 are intended to be very simple; no specific requirements for weighing the fish (ex., weighing standards, requirements for scales, procedure certification/approval process) and no process/standards for approving exemptions were identified by the Council or NMFS during the discussion.

The Herring PDT discussed this measure, considered the discussion at the Council meeting, and identified a number of questions/concerns. The issues, challenges, and complexities related to accurately weighing fish and sampling landings in the Atlantic herring fishery have been a primary focus of discussion by the Herring PDT, Herring Committee, Advisory Panel, and Council during the development of Amendment 5. Therefore, a simple requirement that dealers accurately weigh all fish is unclear and somewhat confusing. In July 2010, Council staff provided an extensive white paper regarding the potential applicability of various scales and weighing methods in the fishery (see *Potential Applicability of Flow Scales, Truck Scales, and Volumetric Measurement in the Atlantic Herring Fishery*). This paper generally describes several practices that are currently utilized by herring vessels, dealers, and processors to offload fish, determine the weight of fish that are bought/sold, and distribute it to various markets. The paper provides information about the types of scales that are used/could be used to weigh fish and some general information about the potential costs (financial and other) and benefits associated with them. It also provides information about methods to consider for improving volumetric-based weight estimations and/or confirming them through a third party. It identifies challenges, potential problems, and issues to address with respect to estimating catch in a high-volume fishery like the Atlantic herring fishery and considers approaches that are applied in other, similar fisheries. Many of the approaches were considered during the development of Amendment 5, but replaced with this proposed requirement for dealers to accurately weigh all fish.

- This measure is vague, and no additional direction was provided to clarify it. At this point in the development of Amendment 5, the Council should be aware of the nature and scale of this fishery, the details of various fishing practices, and the challenges associated with accurately weighing all fish. If the intent is for dealers to weigh all fish, then it seems that standards should be set to clarify how that requirement can be complied with by all herring dealers and how it can be enforced (i.e., how it can be verified that the fish are weighed and that the weights are accurate).
- It is not clear how this measure relates to the Goals and Objectives of Amendment 5. The second goal of the Amendment 5 catch monitoring program is *to develop a program providing catch of herring and bycatch species that will foster support by the herring industry and others concerned about accurate accounts of catch and bycatch, i.e., a well-designed, credible program*. One of the objectives related to that goal is *to eliminate reliance on self-reported catch estimates*. How does this measure enhance the catch monitoring program and improve the accuracy of catch and bycatch information in the herring fishery?
- What does the Council mean by “accurately weigh all fish”? Would scales be required to be utilized by all dealers? Would dealers (bait and food) be required to sort all fish by species prior to weighing them? For high-volume landings, would estimation of total landings from

a subsample be allowed? If so, what amount of precision is required by the term “accurately”?

- Analysis of this measure by the Herring PDT will be limited because there is no way to predict what dealers may do differently to comply with this measure, so there is no way to predict any potential costs or benefits. The Amendment 5 document will provide detailed information about herring dealers (number, location, markets, etc.) and can describe some approaches that may be utilized to weigh fish, but no specific analyses can be developed.
- The provision allowing the Council to approve exemptions for dealers who can demonstrate that it is infeasible to weigh the fish is unclear. NMFS staff in particular expressed concern about this measure. The language should suggest that the Council would consider exemptions, not approve them. There is currently no process for the Council to consider/approve exemptions, or standards by which to evaluate the need for an exemption. Without any standards for meeting this requirement, it is not possible to predict how many dealers would seek exemptions. Would exemptions be granted annually, prior to the start of a fishing year? Would this process involve a framework adjustment or rule-making? Would exemptions be permanent, or annual, with/without an expectation that the dealer would make efforts to meet some standards for accurately weighing fish in the future? These are administrative/policy issues that should be resolved by the Council and NMFS.

Options for Observer Coverage Levels

The Herring PDT discussed the options in Amendment 5 for observer coverage levels in the herring fishery. There was general agreement that currently, the options are vague and require further analysis/development. The PDT agreed to develop a comparative analysis of the options to more clearly illustrate what the coverage levels may be under each of the options, while considering how the options relate to the current (SBRM) approach and what the process would be for analyzing/determining coverage levels in the future. Particular attention will be focused on stratification of the data (precision versus accuracy) and ways to address/resolve variability in the datasets. This will be a very complicated analysis and a critical component of the Amendment 5 Draft EIS. The PDT agreed that the first step should focus on the statistical/technical analysis related to potential coverage levels. Then, additional work can address potential costs and fishery-related impacts.

Measures to Address Sampling/Slippage and Maximized Retention

The Herring PDT briefly discussed options in the document to increase sampling, measures to address net slippage, and an alternative to consider an experimental fishery to evaluate maximized retention. Many of the measures in this section will be revisited by the PDT once some of the preliminary analysis in the DEIS has been drafted. One option that the PDT expressed particular concern and raised some questions about is **Option 12 in Section 4.3.13 of the January 2011 Amendment 5 Discussion Document – Catch Deduction (and Possible Trip Termination) for Slippage Events:**

- This measure does not enhance catch monitoring. If this measure is intended to provide a disincentive for slipping catch (versus improving the sampling of slipped catch and the accuracy of catch data), then it will be important to account for the 100,000 pound catch

deductions in a way that separates this catch from fish that are landed/sold, to avoid further discrepancies in the datasets.

- If this measure is implemented, a separate code should be developed for the IVR/VMS/VTR data to identify the slipped catch, so that it remains separate from the other data. It also will be important to ensure that this catch is not included in the catch-at-age matrix.
- Available information (previously provided by the PDT) suggests that the estimated weight of slipped catch is less than 100,000 pounds. The PDT will review/update this information in the Amendment 5 document.
- Safety concerns related to the consequences of this measure were acknowledged by the Herring PDT. The PDT also reiterated concerns about placing observers in undesirable situation because of perceptions that this measure is punitive in nature.
- The PDT expressed some concerns about potential inequities associated with this measure. For example, the consequences of exceeding the 10-event slippage threshold (trip termination, ACL/sub-ACL overages, and/or accountability measures) could be significant particularly for the directed herring fishery participants, yet the consequences could be the result of the actions of non-directed vessels (i.e., Category C and/or D vessels). Furthermore, the measure provides a very weak incentive for individual vessels to avoid slippage until there are ten slippage events in an area. Once ten events are reached, the trip termination is an extremely strong incentive to avoid recorded slippage events, which may have impacts on vessel safety and observers (see above).
- The PDT emphasized the importance of focusing on management measures that will enhance the collection of accurate catch information in the Atlantic herring fishery. There are many other measures under consideration in Amendment 5 that address this objective. Council staff will develop a table/matrix for this section of the document (Measures to Maximize Sampling and Address Net Slippage) to better illustrate the combinations of options the Council should consider to achieve the goals and objectives of the catch monitoring program.

The PDT briefly discussed the alternative in the Amendment 5 document to evaluate maximized retention through a time-limited experimental fishery sponsored by NMFS. The PDT agreed that without a connection to a portside sampling program, there seems to be less justification to consider maximized retention in the fishery at this time. Many options in the document focus on improving catch reporting and increasing/enhancing sampling at sea. NMFS and Council staff identified some administrative details associated with this alternative that will require further discussion. The PDT will revisit this measure at a future meeting.

Measures to Address River Herring Bycatch

The Herring PDT reviewed the River Herring Monitoring/Avoidance and Protection alternatives under consideration in Amendment 5. Some clarifications were made, and some general analytical issues were discussed. Much of the discussion focused on developing the new **river herring catch trigger-based monitoring/avoidance and protection options proposed by the Council at its January 2011 meeting:**

- The PDT reiterated its concerns regarding the variability associated with the river herring catch estimates. Even when utilized as triggers, the numbers represent expansions from variable estimates that result in more variable estimates, that will then be used to monitor the

fishery (see Draft Herring PDT Discussion Paper: *Developing River Herring Catch Cap Options in the Directed Atlantic Herring Fishery* and December 2, 2010 Herring PDT Report). In addition, the proposed trigger options are based on expanded estimates of river herring catch from a discrete window of time: 2005-2009. If and when river herring abundance changes in the future, these triggers may no longer be appropriate and could result in initiating actions (i.e. increased monitoring, protection) much sooner or later than anticipated and/or necessary. Since a link between river herring abundance and a catch-based trigger is not available (and likely not possible), trigger-based management options could be ill-suited for achieving the specific goals and objectives identified in Amendment 5.

- Monitoring the catch triggers presumably should occur through estimation based on observer data (versus what is observed) because the triggers themselves are based on estimation based on from observer data. However, this issue needs further discussion, and perhaps some guidance from the Committee or Council. A methodology for estimating/monitoring river herring catch on a real-time basis should be developed, and time lags should be acknowledged. Other issues/details should be address (for example, how to account for trips that cross multiple catch areas).
- The PDT expressed some concerns about equity/fairness issues related to these measures. Because of the spatial distribution of potential closure areas, it is possible that the consequences of river herring bycatch will be borne by vessels which did not catch river herring. This should be discussed further.
- The PDT agreed that some flexibility should be incorporated into these measures so that the river herring areas (monitoring/avoidance/protection), as well as any catch triggers, are reviewed/updated regularly. Including this review during the specifications process (every three years) and allowing updates through framework adjustments would be appropriate.

Amendment 5 Affected Environment

The Herring PDT reviewed and discussed a general outline for the Amendment 5 Affected Environment (AE) and provided Council staff with suggestions for updating information that will be required in the document. The AE will update information from 2006-2010 (five years since the implementation of Amendment 1) and will focus on providing data that are related to the management measures under consideration and the evaluation of the impacts of those measures. The intent is to build from the Amendment 1 EIS and update all of the related stock and fishery information since the implementation of Amendment 1 in 2006. The Herring PDT agreed to focus on the following “valued ecosystem components” (VECs) in the Amendment 5 AE and analysis of impacts:

1. Atlantic Herring
2. Non-Target Species and Other Fisheries
3. Physical Environment and EFH
4. Protected Resources
5. Fishery-Related Businesses and Communities

“Non-target Species and Other Fisheries” will include a summary of available information about catch/bycatch of all species in the Atlantic herring fishery, with particular attention to and additional information about river herring, Atlantic mackerel, and multispecies (groundfish). The utilization of herring as bait and the importance of herring to the lobster, tuna, and recreational fisheries will be discussed as part of the “Fishery-Related Businesses and Communities.” The importance of herring to other non-consumptive users (whale watching, etc.) will be addressed in the background section regarding the importance of herring as a forage species (part of the Atlantic Herring VEC). The target completion date for drafting the AE section is May 2011, so that the analysis can build on the information in the AE. The PDT recognizes that some data for 2010 may not be available by May; placeholders will be left for these data so that the document eventually will be completely updated through 2010.

Other Issues

The Herring PDT discussed work priorities and timelines and agreed that the PDT working group to explore data issues and sampling variability should schedule a meeting and begin discussions soon. While there is no longer a portside element to the catch monitoring program proposed in Amendment 5, improving catch data involves addressing/resolving sampling variability. State portside sampling programs will continue to play a critical role in addressing sampling issues improving the accuracy of catch information. The working group will work informally prior to the next PDT meeting to develop analyses related to sampling issues, so that the full PDT can have a more informed discussion and focus on developing analyses and recommendations for the Council.

The PDT anticipates meeting again in April to review preliminary analysis and continue work on the Amendment 5 Draft EIS.

NEW ENGLAND FISHERY MANAGEMENT COUNCIL

FINAL Herring Plan Development Team (PDT) Report

May 11, 2011

Holiday Inn, Mansfield MA

The Herring Plan Development Team (PDT) met on May 11, 2011 at the Holiday Inn in Mansfield, MA to:

- Continue work on analyses related to the management alternatives under consideration in Amendment 5 to the Herring Fishery Management Plan (FMP);
- Review/discuss the Omnibus Standardized Bycatch Reporting Methodology (SBRM) amendment/methodology and relationship to the observer coverage options under consideration in Amendment 5;
- Review updated portside sampling/observer data analysis and develop Herring PDT recommendations;
- Review preliminary analysis of observer coverage options and discuss next steps;
- Review general information about State sea sampling programs and discuss related issues for Amendment 5;
- Discuss options for river herring catch triggers; and
- Discuss (preliminary) analysis of river herring management alternatives

Meeting Attendance: Lori Steele, PDT Chairman; Talia Bigelow, NEFMC Staff; Matt Cieri, Jon Deroba, Tim Cardiasmenos, Sara Weeks, Micah Dean, Jamie Cournane, Mike Armstrong, Madeleine Hall-Arber, Jason Stockwell, Rob Vincent, Chris Vonderweidt (Herring PDT Members; Jason Didden, Carrie Nordeen, and Aja Peters-Mason via Webinar); Paul Rago (NEFSC); Dave Ellenton (Cape Seafoods, Herring AP Chairman); Peter Moore (NORPEL); Jeff Kaelin (Lund's Fisheries); Chris Weiner, Steve Weiner (CHOIR).

After a brief round of introductions, Ms. Steele provided a brief update to the Herring PDT regarding the status of Amendment 5 development and decisions made at the April 2011 Council meeting. She also identified the primary issues for the PDT to address at this meeting – SBRM methodologies, preliminary analysis of observer coverage options, and general discussion of upcoming work to analyze the river herring management alternatives in Amendment 5.

Omnibus Standardized Bycatch Reporting Methodology (SBRM) Amendment

Paul Rago provided the Herring PDT with a detailed overview of the SBRM Amendment, its objectives, methodologies, and the process through which the SBRM is utilized to allocate observer days across fisheries. The SBRM Omnibus Amendment consists of a collection of methods – a sampling design, data collection procedures, and formal analyses – to estimate bycatch (discards) across multiple fleets participating in numerous fisheries throughout the Northeast region. Discards are estimated using a ratio estimator, where the ratio of discarded fish of a given species to the total kept catch of all species is multiplied by total landings and summed over strata (i.e., gear type and region). Generally, observer days are allocated to

achieve a target 30% CV on the estimate of total discards. Allocations of observer days are based on FMP-managed species, but bycatch of all species is monitored (i.e., river herring is not the basis for coverage allocations, but river herring bycatch is monitored in all fisheries that are covered). Important assumptions in the SBRM approach include: the measure of underlying variability is the same from year to year, fleet characteristics and fishery operations will remain generally the same as the previous year, and trips are generally equal in terms of probability of encounter and amount of discards. Random sampling of the fleet is also critical. SBRM “fleets” of interest to the herring fishery include (but are not limited to) NE purse seine, Mid-Atlantic midwater trawl, and NE midwater trawl.

The Herring PDT’s discussion of the SBRM Amendment and its relationship to Amendment 5 focused on many issues, which the PDT will address to the extent possible in a working document that will be drafted to develop/analyze alternatives for observer coverage in Amendment 5 (Herring PDT Chair agreed to begin to draft the working document for the upcoming PDT Meeting). Some important elements of the PDT discussion at this meeting included:

- How do the SBRM fleets relate to the vessels that are being regulated in Amendment 5 (Category A/B/C)?
- How can SBRM be utilized to achieve the Council’s objectives with respect to river herring?
- How can total removals be estimated for non-target species in the herring fishery (not just discards)?
- How do the additional measures under consideration in Amendment 5 that may require observer coverage in certain times/areas impact the SBRM approach, the projected coverage levels, and/or the target CVs?
- How can portside sampling data be utilized to improve catch/bycatch estimates for the herring fishery?

The PDT discussed precision versus accuracy and the potential for adaptive sampling to resolve some variability year-to-year within the strata. Accuracy is a significant challenge with respect to discard monitoring, but the theory behind random stratified sampling is that there is a strong association between the observed and the unobserved, such that the observed catch can be applied to make inferences about the unobserved catch. Using the SBRM approach, a discard ratio can be used to estimate catch composition, which can then be applied to total landings for the fleet; this generally validates that the sample of the fleet is representative and that the methods used to estimate discards produce relatively accurate results.

Another very important consideration in the SBRM and with all observer allocation programs is that there are diminishing returns, i.e., there is an asymptote in the relationship between precision and the level of coverage – a point at which the returns (in terms of precise bycatch estimates) on the investment (in terms of observer days) becomes less, and benefits are marginal relative to costs. This is a very important consideration, especially relative to measures that consider very high levels of coverage intended to capture events that are considered “rare.” The Herring PDT notes that previous and ongoing analyses of coverage in the herring fishery suggests that sizable increases in observer coverage do not always produce similar increases in the precision of bycatch estimates. The pre-trip notification system (PTNS) for the entire limited access herring

fleet proposed in Amendment 5 should help to improve the predictability of fishing trips and the SBRM because the fleet's activity can be gauged on a more real-time basis.

The Herring PDT discussed the SBRM performance standards – expressed as coefficients of variation (CVs) – and the SBRM importance filter (95% of discards and 98% of mortality) – a criteria-based tool applied to the projected sea days needed to achieve the performance standard. The importance filter reduces the potential to allocate a disproportionate number of observer days to a strata with very low importance to the fishery (low contribution to either bycatch or fishing mortality). Targeting specific CVs by strata increases the costs of observer coverage because this approach draws effort into areas where lesser effort has been placed previously (in order to increase precision). The SBRM approach allows for these areas to be identified, along with the tradeoffs associated with achieving a target level of precision for a specific stratum. A 30% CV was selected as the general performance standard in the SBRM but can be interpreted as a starting point if this approach is utilized. Additional performance standards could be adopted depending on the Council's objectives for the allocation of observer days. This is something that should be investigated further.

The PDT acknowledged the challenges associated with determining coverage levels and observer allocation systems to achieve target CVs in all strata, particularly in the herring fishery where variability is significant spatially and temporally. Moreover, the management measures proposed in Amendment 5 could require some sub-areas within the SBRM strata to require observer coverage, consequently moving the entire system away from a random stratified design and towards a more systematic sampling approach designed to meet certain objectives, which should be more clearly specified in the document. This will complicate the development of options designed to achieve target levels of precision across all strata in the fishery. Some bycatch problems can be moving targets, varying seasonally or annually due to regulations, environmental factors, and species abundance. Over the long-term, the process for optimizing the allocation of observer resources requires flexibility and adaptability.

The Herring PDT continued to discuss the development of specific options for observer coverage levels in Amendment 5 and the related analyses. Ms. Steele reviewed the current options, which are generally vague (except for status quo and 100% coverage); the options will be incorporated into the working document, along with measures to address service providers, waivers, and funding. Ultimately, these will form specific alternatives that will relate to the PDT's analyses. A sub-group of PDT members met in March to review observer and portside sampling data and begin to work on the analyses related to the SBRM and observer coverage levels; at the time, the working group agreed to develop three general approaches to prioritize/allocate observer days in Amendment 5: (1) SBRM approaches; (2) SBRM-like approach with some modification, designed to achieve a 20% CV for river herring and a 30% CV for haddock; and (3) a "within-trip variability approach" that will examine basket-level data to address some variability issues and improve accuracy. During the discussion at the PDT meeting, it was noted that basket-level data (including captain's haul estimates) are not entirely available within the 2010 NEFOP dataset used in the PDT's analysis; Dr. Rago agreed to follow-up on this issue with the specific PDT members who are working on the analysis.

The PDT agreed that options to consider changes to SBRM performance standards and/or priorities should be explored (for example, if the Council wants to consider establishing a 20% CV for river herring catch as a performance standard). There may be some administrative/policy complications associated with this approach since the SBRM is a cross-cutting program, but Council staff will explore this. The PDT also agreed that options could be further developed that establish a process complimentary to/concurrent with the SBRM process, through which the Herring PDT would explore tradeoffs associated with achieving specific objectives for the herring fishery, above and beyond those identified in the SBRM. The PDT process would result in a supplemental analysis for the Council to consider when developing recommendations about the allocation of observer days during SBRM priority-setting. Options for funding additional observer days could be incorporated into these alternatives. Council staff agreed to consider these ideas when further developing the details of the observer coverage alternatives in Amendment 5. The PDT will review more complete draft alternatives at its next meeting.

The PDT discussed the updated analysis (to be provided in the Amendment 5 Draft EIS) to characterize the levels of observer coverage that may be needed 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 will provide CV estimates and projections based on 2010 observer data for Category A, B and C (limited access) herring vessels on trips declared into the herring fishery (i.e., trips not declared out of the fishery). The group discussed whether or not to include trips with zero catch of herring (11 of 123 total trips in the database); to be consistent with the measures proposed in Amendment 5, the data will include all trips not declared out of the fishery. Trips on A/B/C vessels that did not encounter any herring in 2010 are a small percentage (10%) and still represent “herring trips” for the fleet that the Council intends to manage through Amendment 5. If improving the precision of catch estimates for a species is the objective, then the SBRM methods can accommodate this, even if the species is largely retained in the fishery. However, variability in some strata is such that the costs of achieving this precision could be very high; the PDT emphasized the importance of understanding this when making decisions about allocating observer days.

The PDT briefly discussed bycatch that is documented by observers as either “fish NK” or “herring NK.” Dr. Rago agreed to double check and clarify if/how these categories are treated in the SBRM process, and the PDT will provide more detailed information about this in the working document and the Draft EIS for Amendment 5. The group agreed to review/discuss the recently-published Draft (Part I) River Herring/Shad Incidental Catch Analysis produced by the NEFSC for the MAFMC’s Mackerel Amendment at its next meeting.

Simulation Modeling for Observer and Portside Sampling Regimes

Micah Dean presented an updated analysis to the Herring PDT that examines similarities and differences between bycatch data collected by observers versus portside samplers. This represents the second phase of the PDT assessment of the portside sampling data and will frame the recommendations in Amendment 5 regarding how portside sampling data can continue to be utilized to improve catch monitoring and bycatch estimation in the herring fishery. In general, the analysis shows that there is better agreement than previously thought between the two programs with respect to river herring bycatch estimation, although problems exist with specific portside methods. Dr. Cieri noted that as a result of the analysis, ME DMR will focus more effort to sampling full offloads (versus partial offloads or lots) but cautioned that only sampling full offloads may bias the data and may not be fully representative of the fleet because some vessels are not equipped to land in facilities that are amenable to sampling full offloads. The PDT will review the completed document and develop recommendations at a future meeting.

Measures to Address River Herring Bycatch

Dr. Cournane updated the Herring PDT on the development of analyses related to the measures to address river herring bycatch in Amendment 5. Ms. Steele briefed the PDT on the measures under consideration, and the group spent some time discussing the details of measures to establish and monitor river herring catch triggers.

- Dr. Cournane and the PDT identified some important issues to consider when developing options to monitor a river herring catch trigger, including the stratification used to estimate removals, variability associated with sea sampling and coverage rates, the levels of monitoring that would be needed in each of the trigger areas, processing time for data, and increased complexities associated with the proposed Framework 46 (haddock catch cap) measures and reporting requirements. The PDT discussed these issues and agreed that total kept catch by river herring trigger area would be required by vessels to monitor the catch triggers. It may be simpler to modify reporting requirements to include total kept catch by statistical area since the Framework 46 measures require total kept catch by haddock stock area (which are different than river herring catch trigger areas, all of which are also different than herring management areas). Council staff will work with Dr. Cournane and NMFS NERO staff to overlay the Framework 46 measures and begin to address some of the challenges associated with the complex reporting system.
- Dr. Cournane described a ranking system that she proposes to develop and utilize to evaluate the probability of encountering river herring outside of areas that are under consideration for seasonal closure (protection areas). The ranking system would be based on historical bottom trawl survey data in the quarter degree squares that surround a square that may be closed. The Herring PDT discussed the utility of a ranking system to provide a basis for comparing closures (if there are multiple options for closures) and the possibility of using an alternative qualitative approach to evaluate the potential impacts of the closures on the river herring resource. Dr. Cournane will provide a preliminary analysis using the qualitative approach at the next meeting.
- The PDT hopes to receive an update on the economic analysis related to these measures as well (from Dr. Lee), so that these analyses can provide a way to evaluate the management measures under consideration in a more comprehensive manner.

State Observer Programs

Towards the end of the meeting, Ms. Weeks (NEFOP) provided the Herring PDT with a draft summary of State Observer Programs that is being prepared for the Amendment 5 Draft EIS. The PDT agreed that while most of the State Observer Programs do not collect data of relevance to Amendment 5 because they do not sample the Atlantic herring fishery, ME DMR's current sampling efforts in the small mesh bottom trawl (SMBT) fishery are of particular interest. The ME DMR SMBT sampling project is funded for 40 sea days between 2011 and 2012 (December 2010-April 2011 and December 2011-April 2012). The State of ME has a Memorandum of Understanding (MOU) with NOAA that allows funds to be directed to NEFOP samplers so that data are collected in a manner that is consistent with NEFOP protocols. A few SBMT trips were sampled in December 2010 and are included in the 2010 observer data being utilized by the PDT in Amendment 5, but the majority of the SMBT fishery and related sampling efforts by ME DMR occurred in early 2011, during the winter fishery (January – April). The PDT agreed to follow-up and provide/review the data collected through this project once it is all available, around July 2011. This information will be included in the Amendment 5 Draft EIS.

The Herring PDT anticipates meeting again in late June and August to review analyses and complete work on the Amendment 5 Draft EIS.

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. Courneau 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.

NEW ENGLAND FISHERY MANAGEMENT COUNCIL

FINAL Herring Plan Development Team (PDT) Report

August 10, 2011

Holiday Inn, Mansfield MA

The Herring Plan Development Team (PDT) met on August 10, 2011 in Mansfield, MA to:

- Continue work on analyses related to the management alternatives under consideration in Amendment 5 to the Herring Fishery Management Plan (FMP);
- Finalize technical elements of analyses related to alternatives under consideration in Amendment 5 to allocate observer coverage on limited access herring vessels;
- Continue work on analyses of management measures to address river herring bycatch; and
- Discuss other elements of the Draft EIS for Amendment 5 to the Herring FMP.

Meeting Attendance: Lori Steele, PDT Chairman; Talia Bigelow, NEFMC Staff; Matt Cieri, Jon Deroba, Tim Cardiasmenos, Sara Weeks, Min-Yang Lee, Micah Dean, Jamie Courmane, Madeleine Hall-Arber, (Herring PDT Members); Chris Vonderweidt via GoToMeeting webinar (ASMFC); Greg Willis, David Mecina, Rachel Trafford; and several other interested parties via GoToMeeting (webinar).

After some general announcements, Ms. Steele provided a brief update to the Herring PDT regarding the status of Amendment 5 development and the schedule for completing the Draft EIS for the September 2011 Council meeting. She also identified the primary issues for the PDT to address at this meeting – technical issues related to the analyses of observer data, alternatives to allocate observer coverage, and the river herring management alternatives in Amendment 5. Ms. Nordeen briefly updated the PDT on the status of NMFS rulemaking for catch monitoring in the herring fishery and the implementation of the Framework 46 (haddock catch cap) provisions. NMFS is hopeful that the rules for both of these actions can be published prior to the September Council meeting, but timing remains uncertain.

Review of Updated Slippage Information, Discussion of Fish NK/Herring NK, and Discussion of Measures to Address Net Slippage

Sara Weeks from the Northeast Fisheries Observer Program (NEFOP) provided the Herring PDT with a summary of data collected by observers regarding released catch events on limited access herring vessels during the 2010 fishing year. She noted that between the increased observer coverage and the new observer discard log implemented in 2010, information about catch not brought on board herring vessels has improved considerably. Catch not brought on board include partial and full slippage events as well as operational discards. Operational discards have been confirmed by observers to be relatively small amounts of fish that may remain in the net following a successful haul/pump; these fish are usually caught in the net and/or cannot be pumped on board. Information collected by observers about operational discards has improved considerably, and hauls with operational discards are considered to be “observed” hauls; the operational discards are estimated by the observers and represent “small” amounts of fish (the

average amount of operational discards estimated by observers in 2010 was about 350 pounds). Any partial or full released catch (“slippage” as defined in Amendment 5) is considered unobserved, but observers still collect as much information as possible about these discards.

In 2010, observer coverage was around 30% fishery-wide and was significantly higher on midwater trawl vessels fishing on Georges Bank (85% coverage by weight of fish landed). Overall, observers provided data for 929 hauls on limited access herring vessels during the 2010 fishing year. The new discard log allows observers to provide more information about reasons for not bringing fish on board, including who estimated the released catch, additional details regarding why the catch was released, and whether the discards were observed on the deck or in the water; additional information from the 2010 discard log should be available by the end of this year and will be added to the final Amendment 5 EIS document. Ms. Weeks reviewed data for the 332 observer records (287 unique hauls) in 2010 that included fish not brought on board. About 290 of these records were documented with “not enough fish to pump,” i.e., operational discards. Observers document operational discards as Herring NK if they are able to see the fish that are not pumped and confirm that the discards are all herring-bodied fish. Otherwise, the discards are documented as Fish NK. The total weight of fish not brought on board estimated by observers in 2010 was about 460,000 pounds; this includes operational discards, which, although more frequent, generally represent very small amounts of fish. Total herring landings for this fleet in 2010 were about 58 million pounds.

A preliminary review of the observer data indicate that in 2010, only 35 records (approximately 30 unique hauls) of 929 hauls (3.2%) that were observed on limited access herring vessels were documented to have experienced full or partial slippage events. The total estimated catch not brought on board compared to the total observed catch on these vessels in 2010 was about 0.7% (this does not include fish that were brought on board and then discarded). In addition, there were 99 hauls observed in Closed Area I during 2010, under the new provisions for sampling catch, implemented in November 2009. There were no slippage events observed in these 99 hauls, and consequently no Released Catch Affidavits were submitted from the Closed Area I fishery in 2010. There appears to have been one released catch event (estimated 1,500 pounds) on a haul that ended (but did not begin) in Closed Area I; NEFOP staff will investigate this further when information from the discard log becomes available. However, the recently-implemented revisions to the Closed Area I rules (January 2011) require that all operational discards be brought on board; potential logistical and sampling issues associated with this new requirement are unclear because fishing effort has not yet moved into Closed Area I this year.

The PDT discussed the evolution of the Fish NK and Herring NK categories in the observer data and the ongoing effort to better document all fish either kept, discarded, transferred, or not brought on board in this fishery. In 2010, Herring NK was documented on 122 hauls, and Fish NK was documented on 200 hauls. The majority of Herring NK (86%) was due to “not enough fish to pump” (operational discards). Sixty nine percent (69%) of Fish NK was associated with operational discards. In general, the amounts of fish classified in these categories per haul are relatively small. There was one sampling event in 2010 that documented 30,000 pounds of Herring NK “kept,” which represents almost half of all Herring NK observed in 2010. In this one event, the observer was able to see the fish as they came on board, and during the pumping process, the observer could confirm that the fish were all herring-bodied fish but could not obtain

basket samples for safety reasons. About ½ of observed Fish NK and Herring NK in 2010 was landed; in these cases, portside sampling would be beneficial to confirm the species composition of the landings.

Following the general overview, the Herring PDT discussed the options under consideration in Amendment 5 to address net slippage and noted the following (Council staff will draft the assessment of impacts of the slippage measures based on the information provided by the NEFOP staff and the PDT discussion):

- Option 2 (Released Catch Affidavit): The discussion of this option should note that while the intent may be to provide a cross-check with the observer's log based on the captain's estimation of slipped catch, most captains are communicating with observers already and asking observers what they are recording for discards in the discard log. There is also already a place in the observer's log for the captain to provide additional information or his/her perspective on catch and discards in any cases where the captain may disagree with the observer's estimates (fishermen's comment log); this information becomes part of the NEFOP's formal database, and several have already been submitted. Moreover, observers already document operational discards and other events with photographs and are encouraged to take pictures in any instances where released catch can be observed and/or species identification is an issue. Vessel trip reports (VTRs) represent the captain's estimate of catch under a legal mandate, subject to penalty under law if falsified. Therefore, requiring the Released Catch Affidavit may be redundant.
- Option 3 (Closed Area I Sampling Provisions): While the original provisions appear to have been feasible from a sampling and logistical perspective, the new provisions to require operational discards to be brought on board have not been practiced yet because the fleet is just now moving into Closed Area I. There may be some new challenges associated with bringing operational discards on board for some vessels. Another important consideration is that Option 3 proposes to adopt these provisions throughout the fishery on any trip with an observer on board, but it is unclear how these provisions may affect purse seine operations (only trawl vessels fish in Closed Area I). The operation of the purse seine fishery is substantially different than that of the trawl fishery, and consideration must be given to the size of the vessels, nature of the fishery, and practical implications of bringing the net on board to ensure that all operational discards come across the deck.
- Option 4 (Catch Deduction and Possible Trip Termination): Additional sub-options have been developed by Council staff in an effort to provide potentially-feasible and legal options that capture the intent of the original measure. However, the PDT expressed several concerns related to all of the sub-options, many of which were identified/discussed by the group at a prior meeting. Several PDT members expressed significant concern with linking slippage events for safety reasons to a catch deduction, as fishermen may ultimately bring fish on board in unsafe situations to avoid a catch deduction or trip termination. The PDT also noted the inconsistency associated with implementing a perceived punitive measure (catch deduction/trip termination) for slippage due to safety and gear malfunction, but not for slippage due to other factors (bycatch, market conditions, etc.). Moreover, safety issues for smaller vessels and purse seine vessels in the inshore Gulf of Maine may be different than those for larger vessels fishing offshore. All of the PDT's previous concerns about this option still apply (legal challenges, deductions from a sub-ACL for fish that may not have

been caught, and the resulting inconsistencies that the catch deductions will create in the dealer/VTR/VMS catch databases).

- A preliminary assessment of the data suggest that for the most part, the amount of fish estimated to be slipped in full/partial slippage events is less than 100,000 pounds. Information about slippage events and details about the released catch improved considerably in 2010 with the establishment of the new discard log. In addition, the observed number of slippage events declined in 2010. The PDT agreed to provide additional information/data for the discussion in the Draft EIS, including a summary of the number of observed full/partial slippage events by management area and gear type for 2009 and 2010 and estimates of the average amount of fish slipped during these events.

Alternatives to Allocate Observer Coverage on Limited Access Herring Vessels

The Herring PDT followed-up with the revisions to the analysis of alternatives to allocate observer coverage on limited access herring vessels. Dr. Cieri provided an overview of his updated analysis, which includes the addition of five small mesh bottom trawl trips in the Gulf of Maine documented by ME DMR. The data were combined across all areas, the SBRM catch filter (2%) was applied, and strata that may require pilot coverage were identified. This analysis is intended to provide the Council with an example of the kind of supplemental analysis that would be provided (by the PDT or NEFSC) for the Council to consider when prioritizing days under the SBRM process. The supplemental analysis focuses on allocating days to the limited access herring fishery (A/B/C) to target a 20% CV on estimates of river herring removals (kept and discarded). While this approach may help the Council understand the trade-offs associated with allocating days to achieve different objectives, there still remain several challenges that should be addressed through the annual prioritization/allocation process and any supplemental analysis specific to the limited access herring vessels:

- **Timing:** SBRM allocations are based on data from July-June, and the PDT analysis is based on a calendar year. This could be modified in the future if the Council adopts this approach. The analyses that the PDT has provided thus far demonstrate that CVs for river herring catch estimates tend to vary substantially from year to year anyway, so timing may not be as important as simply identifying the strata (gear/area) where additional coverage would improve estimates of river herring removals from this fleet.
- **Linkage between SBRM Fleets and Herring Limited Access Vessels:** The relationship between the SBRM fleets and the limited access herring vessels that would be subject to the Amendment 5 provisions is a difficult one to characterize and address in the analysis. The PDT reviewed some preliminary data, which will be provided in Amendment 5, that shows a strong relationship between the herring Category A vessels (most of the limited access directed fishery participants) and the NE midwater trawl fleet, the Mid-Atlantic midwater trawl fleet, and the NE purse seine fleet. The data also demonstrate that the Mid-Atlantic purse seine fleet does not represent vessels in the herring fishery, but rather the menhaden fishery. Therefore, the SBRM process and the allocation of days to the NE and MA midwater trawl and NE purse seine fleets through the SBRM analysis sufficiently covers the majority of the limited access directed herring vessels.

Category C vessels present more of a challenge because they are a more diverse fleet, and many of the Category C vessels use bottom trawls. The Herring PDT example analysis includes bottom trawl vessels, so allocating an appropriate number of days to the small mesh bottom trawl herring vessels could be determined using an approach similar to SBRM, i.e., applying proportions based on fishing activity by these vessels in the previous year, under the assumption that the next year will be similar to the previous year.

Analysis of River Herring Bycatch Measures and Economic Analysis

Jamie Cournane updated the Herring PDT on her work to characterize the impacts of the management measures under consideration to address river herring bycatch.

- The PDT reviewed and discussed a draft table that summarizes available estimates of river herring catch/bycatch/removals from various sources and provides context of these removals relative to historical river herring catches as well as recent/current river herring commercial (State waters) fishery landings. The PDT suggested that the recent estimates of bycatch from the SBRM three-year report be added to provide context relative to other fleets/fisheries.
- Dr. Cournane provided a brief update on the ongoing ASMFC stock assessment for river herring. Work is being completed in hopes of starting a peer review in early 2012 and conducting the full assessment review over the course of the year.
- The PDT reviewed/discussed an impact/tradeoff matrix that will form the basis of the discussion of impacts of the management measures to address river herring bycatch in the Amendment 5 Draft EIS.

Min-Yang Lee updated the Herring PDT on his ongoing work to assess the economic impacts of the management measures under consideration. The PDT briefly reviewed maps associated with impacts of spatial management options (based on preliminary analysis reviewed at a prior PDT Meeting). Dr. Lee also provided an overview of the economic analysis of observer coverage alternatives and the analysis of measures to address midwater trawl vessel access to groundfish closed areas, which will be based on the same model used to characterize the impacts of the spatial management measures to address river herring bycatch. The PDT will likely review the completed analyses via a conference call prior to completing the Amendment 5 Draft EIS.

Towards the end of the meeting, Talia Bigelow updated the Herring PDT on work to complete the Amendment 5 Affected Environment and asked for feedback prior to August 17. Council staff hopes to release the Draft Affected Environment for Amendment 5 by the end of August or beginning of September so that the Council and the public have more time to review the background information before the Draft EIS is completed. The target date for completing and distributing the Draft EIS is September 16, 2011.

The Herring PDT will likely finish work for the Draft EIS and September Council meeting via email and conference calls. If the Council approves the Amendment 5 Draft EIS for public hearings, the PDT will follow-up with any technical work and revisions in October, prior to submitting the formal Draft EIS.

The Herring PDT meeting adjourned at approximately 4:45 p.m..

