

Evaluation of Rotational Management

Executive Summary of Report with Recommendations from the Scallop PDT Input

March 15, 2022



The New England Fishery Management Council (Council) contracted Fishery Applications Consulting to assist the Scallop Plan Development Team with the 2021 Council priority for “*the evaluation of the rotational management program*” used in the Atlantic sea scallop fishery. The Council’s goals were to assess the performance of the rotational management program relative to a subset of the primary objectives of Amendment 10, which established the program in 2004, and describe how the rotational management program is currently applied with a description of the rationale for implemented changes. The Council’s objectives for the evaluation included documenting the use of rotational management with an emphasis on the most recent period between 2015 and 2021, assessment of the performance of the program relative to the intent of Amendment 10, description of current management measures related to rotational management and outcomes of recent actions, documentation and evaluation of two-year scallop specification actions, and identification of possible areas for improvement to the rotational management program.

The evaluation report includes an introductory overview of the background and purpose of the rotational management evaluation, a review of scallop management actions leading to the adoption and implementation of Amendment 10 and the rotational management strategy, an evaluation of how the rotational management program has met intended objectives, and an assessment of how recent measures to provide additional flexibility under the rotational strategy have met expected outcomes. In addition, the report synthesizes the results of the overall evaluation and provides recommendations on potential improvements and changes to the rotational management program.

Information included in the report and considered in the evaluation of rotational management was obtained from existing available sources, including fishery-dependent data related to effort, landings, discards, LPUE, price, market categories, and port statistics. The report also utilizes fishery-independent data from the scallop survey partner organizations and management considerations as recorded through the Council’s administrative record and available management documents. Appendix 1 includes details of annual scallop survey observations, biomass projections, area-specific allocations, landings, and LPUE for Fishing Years 2017 to 2021.

Based on this evaluation, the following recommendations may be considered to change and improve the scallop rotational management program:

Evaluate scallop biomass projection models and associated uncertainty.

- The Northeast Fisheries Science Center (NEFSC) has committed to assessing the performance of the Scallop Area Management Simulator (SAMS) projection model and the newly-developed GeoSAMS projection model through the 2023 scallop management track stock assessment process.

- Results from the evaluation of rotational management may be useful to inform future iterations of scallop projection models and should be considered through the assessment process.

PDT Input:

- *Upcoming Specifications:* The PDT recommends close tracking of the performance of the NLS-South (Peter Pan scallops).
- *Scallop Survey Working Group:* The PDT noted that sampling frequency and intensity of surveys (a topic being addressed by the SSWG) may have impacts on the performance of the current projection model, and associated uncertainty.
- *Future Research:* Consider research aimed at better understanding the entire cycle of rotational area performance, from surveys to harvest. This should include trying to isolate events or processes that led to particular outcomes, such as dramatic swings in biomass. Research that seeks to better understand the impacts of fishing in areas with high densities of scallops, including scenarios with heavy fishing pressure.
- *Other:* The PDT noted that early in the Rotational Management Program, the Council would only allocate trips when there was enough biomass to support a “full trip” for all Limited Access vessels in a rotational area. This practice has changed as the Council has used management tools to improve flexibility, such as “flex trips” and partial trip allocations. One future consideration for the Council is how much risk/uncertainty is it willing to accept with access for partial trips.

Consider the performance of flexibility measures for future scallop management actions.

- Conclusions from the evaluation indicate that measures to increase flexibility of rotational management have provided benefits to the fishery, but cumulative impacts from combined measures should continue to be considered.
- Flex trip options should include an assessment of area-specific LPUE projections, characterization of market categories of landings, and scallop price per pound information to inform potential fishery utilization within flex area options.
- A description of scallop catch accounting methods for all allocations should be documented and areas of uncertainty or potential improvement should be identified.
- An evaluation of the DAS carry over provisions, similar to the one provided for access area carry over in the evaluation report, should be conducted to determine if there are potential improvements to current regulations.

PDT Input:

- *Upcoming Specifications:* The PDT recommends evaluating DAS carryover from 2021 to 2022 as an additional source of uncertainty. If flex trips are considered as part of the 2022/2023 specifications, the PDT recommends using the ERM recommendations and documentation of flex fishing to characterize uncertainty for the Council.
- *Other:* A member of the PDT noted that the switch from administering access area allocations from trips to pounds created a more flexible management program, and that the ability for individual vessels to “flex” trips is administered in the most flexible way possible for individual vessels. This includes the ability to utilize allocations from two different fishing years if a rotational area is open in consecutive years, and the trip is taken in the first two months of the second fishing year. This flexibility in accounting has likely led to more overall harvest compared to the system where only trips were allocated. The full report included a similar conclusion to the PDT’s most recent discussion, but also notes that documentation of catch accounting methods could be useful to understand how caught pounds are assigned by area/year, especially for flex trips. The objective is to try to characterize potential uncertainty during specification setting process when fishing is occurring in both “allocated” and “flex” areas.

Consider seasonal measures to improve scallop yield and minimize mortality in access areas.

- Establishing area-specific seasonal restrictions could limit fishing and associated mortality during:
 - post-spawning periods when meat yields are low;
 - summer months when surface water and deck temperatures may exceed lethal limits;
 - periods of overlap with bycatch species of concern.
- An evaluation of potential seasonal restrictions should be conducted to assess the positive and negative impacts to the scallop fishery, resource, and bycatch species of concern.

PDT Input:

- *Upcoming Specifications:* The PDT recommends considering the use of seasonal closures in the upcoming specifications action to improve yield-per-recruit and to reduce mortality. Dr. Hart indicated that she could reduce the predicted meat weights to reflect different patterns in the fishery (recent example: more fishing in the MAAA in October).
- *Future Research:* As was recommended in the full report, research to understand current and future changes of seasonal meat weights. The group felt that there is a good understanding of the current meat weigh anomaly, but that more could be done, and that some simulation work may be appropriate.
- *Other:* The PDT felt that a goal of seasonal closures should be to reduce mortality while harvesting full allocations. The PDT discussed some management options for reducing mortality in rotational areas, noting that there is no time limit on access area trips.

Consider appropriate spatial scale of future access area configurations.

- The optimal size and boundary configuration for rotational management areas were assessed during the development of Amendment 10, but ultimately the fully adaptive rotational scheme was adopted.
- Based on the evaluation and recent performance of specific access areas, review of the Amendment 10 guidance for optimal access area size and configuration is warranted to consider Best Management Practices for the rotational management program.

PDT Input:

- *Upcoming Specifications:* The PDT recommends considering this recommendation in the development of the Closed Area II rotational areas for the 2022/2023 specifications. Areas should be management for the fishery and enforcement. Council operations handbook is a resource for guidance on enforcement considerations.

Evaluate the performance of access areas in the initial and final years of opening.

- The evaluation report highlighted uncertainties associated with the initial reopening of previously closed rotational areas, including anomalous growth, poor meat quality, and unforeseen fishing behaviors.
- The final years of access to rotational areas also have increased uncertainty related to decreased catch rates, which can increase tow time and area swept, resulting in habitat and bycatch impacts, low LPUE, and the need for management interventions.
- Evaluations of area-specific allocation decisions and fishing mortality projections should continue to consider the increased uncertainty associated with the initial and final years of rotational access.

PDT Input:

- *Upcoming Specifications:* The PDT recommends looking at the performance of CAII over the past two years. Projections have been overly optimistic, and there may be some challenges with biomass estimates. If biomass estimates are 20% off of the truth (or more), this will cause issues with the projections for 2023.
- *Future Research:* Focus on the Mid-Atlantic Access Area and continue work on the Nantucket Lightship West. The PDT feels that there is value in understanding the entire process of both of these areas, similar to the comments made when recommending to “evaluate scallop biomass projection models and associated uncertainty.”

Assess options for streamlining the Council process to facilitate annual scallop specification actions.

- Conclusions from this evaluation indicate that maintaining annual scallop specifications based on annual scallop survey information provides benefits to the resource and fishery.
- Amendment 19 to the Scallop Fishery Management Plan (FMP) includes approved methods to update annual scallop specifications in a streamlined manner that is consistent with federal laws and regulations but reduces required analyses and regulatory burden.
- Supplemental Information Reports (SIR) provide a mechanism to update existing management measures, such as annual specifications, without extensive NEPA analysis requirements in some circumstances.
- The Scallop Survey Working Group recommendations can streamline and potentially reduce the timeline to incorporate annual survey information into management actions.
- An assessment of available management tools to maintain annual scallop specifications with reduced process and regulatory burdens should be conducted to assist the Council in developing an adaptive approach for scallop management that allows time and opportunity to focus management and scientific resources on topics beyond annual specifications.

PDT Input:

- *Other:* Council staff and NMFS staff need to follow-up on this and report back to the Committee and PDT.

Consider the use of Management Strategy Evaluation (MSE) to simulate future scenarios of scallop resource and fishery characteristics to optimize the scallop management regime.

- The evaluation report provides baseline information about the performance of the rotational management program since implementation of Amendment 10 and suggests that the program has been successful based on objectives set in 2004.
- An MSE focused on understanding scallop population dynamics, biological and oceanographic conditions, and fishery behaviors, could inform Best Management Practices for the scallop fishery in the future, including addressing ocean use conflicts (e.g., offshore wind farms), changing resource distribution (e.g., related to climate change), and allocation scenarios (e.g., consolidated fishing fleets).

PDT Input:

Future Research: The PDT continues to be supportive of using MSE as a tool to evaluate management objectives in the scallop fishery. The timing of this effort should be aligned with relevant processes. The group noted that there are several ongoing or planned projects that should be considered, like a research track assessment in 2024, and a review of the projection model in 2023. The group discussed mechanisms for completing this work, and Council staff noted the possibility of a contract for an MSE. Some members

of the PDT felt that the Scallop RSA may not be the best tool/process to develop an MSE because the Council can only set a general research priority, and may have limited input into the research. These members of the PDT felt that the Council and its Scallop Committee would need to help drive an MSE process for it to be successful. A next step for this recommendation could be a Committee discussion on ways to identify management objectives and performance metrics. The management strategy should be defined by fishery stakeholders.

Consider updating the names of rotational management areas to reference current management regime.

- Omnibus Habitat Amendment 2 (OHA2) allowed expansion of rotational management options in areas that were formerly a single access area (e.g., Nantucket Lightship and Closed Area II) and updated names for these new areas are needed.
- Use plain language to describe rotational areas. For example, the use of “Closed Area” in the naming scheme for access areas can be confusing.

PDT Input:

Upcoming Specifications: Consider renaming rotational areas in the Fall of 2022.

The evaluation report concludes that the scallop rotational management program has been extremely successful in meeting intended objectives and adapting to changing expectations. There have been challenges to rotational management associated with increased complexity in the scallop resource, fishery, and management strategies, and there is room for continued improvement in the rotational management program. The recommendations in this report may provide useful next step actions for the Council and the scallop fishing industry. Continued periodic review of the rotational management program, as well as the overall scallop management system, could inform Council decisions under a changing environment and fishery in the future.