Summer Flounder, Scup, and Black Sea Bass Monitoring Committee
Webinar Meeting Summary
October 26, 2022

Monitoring Committee Attendees: Tracey Bauer (ASMFC), Julia Beaty (MAFMC), Peter Clarke (NJ DFW), Kiley Dancy (MAFMC), Lorena de la Garza Hernandez (NC DMF), Steve Doctor (MD DNR), Alexa Galvan (VMRC), Hannah Hart (MAFMC), Emily Keiley (NMFS), Dustin Colson Leaning (ASMFC), John Maniscalco (for Rachel Sysak; NY DEC), Mark Terceiro (NEFSC), Corinne Truesdale (RI DFW), Greg Wojcik (CT DEP), Rich Wong (DE DFW)

Other Attendees: Katie Almeida, Chris Batsavage, Alan Bianchi, Lou Carr-Harris, Joe Cimino, Geret DePiper, Greg DiDomenico, James Fletcher, Jeff Kaelin, Kathryn, Meghan Lapp, Jason McNamee, Brandon Muffley, Willow Patten, Marisa Ponte, Will Poston, Scott Steinback

The Summer Flounder, Scup, and Black Sea Bass Monitoring Committee (MC) met via webinar on Wednesday, October 26, 2022 to review the Percent Change Approach for setting recreational measures, accountability measures, outcomes of the Summer Flounder Management Strategy Evaluation, and two statistical models which will be available for setting 2023 recreational measures for all three species (i.e., the Recreational Demand Model and the Recreational Fleet Dynamics Model).

Briefing materials considered by the Monitoring Committee are available at: https://www.mafmc.org/council-events/2022/summer-flounder-scup-and-black-sea-bass-monitoring-committee.

Percent Change and Accountability Measures

Council staff presented an overview of the Percent Change Approach which was approved by the Council and the Policy Board through the Recreational Harvest Control Rule Framework/Addenda. This approach will be used to set 2023 recreational bag, size, and season limits for summer flounder, scup, and black sea bass.

Council staff also noted that a recreational accountability measure (AM) was triggered for scup and black sea bass due to an overage of the average 2019-2021 annual catch limits. The NMFS Greater Atlantic Regional Fisheries Office (GARFO) sent a letter to the Council which stated that, given actions taken by the Council and Board over the past year, no additional action is needed to address the AM for scup or black sea bass.

The MC discussed the intersection between the AMs and the Percent Change Approach. It was noted that the Percent Change Approach and the AMs work together. One does not supersede the other. Additional discussion will take place during the November 15 MC meeting when the group will finalize their recommendations for the percent change in harvest needed for 2023.

Summer Flounder Management Strategy Evaluation (MSE)

Council staff provided an overview of the recently completed Summer Flounder MSE. The MSE evaluated the biological and economic benefits of minimizing recreational summer flounder discards and converting discards into landings, as well as identify management procedures to effectively realize these benefits. Council staff asked the MC for feedback on how to apply the result of the MSE to development of 2023 recreational measures, and additionally how the MSE could be applied in future recreational management considerations. The MSE management procedures (options for bag, size, and season limits) were intended to be illustrative of general management concepts and not designed specifically for 2023; therefore, the specifics of the options would likely need modification for 2023 depending on the percent change in harvest needed for summer flounder. MC feedback included:

- The MC agreed that it may be worth further exploring only the management procedures that preformed notably better than the 2019 measures (referred to as status quo measures in the MSE). For example, Management Procedure 3 (status quo regions, modified season of April 1-October 31) performed similarly to the 2019 measures and therefore may not warrant further consideration.
- The results of the management procedures which included coastwide measures can help inform selection of coastwide measures, either as the preferred set of measures or as non-preferred coastwide measures under conservation equivalency.
    - However, one MC member questioned how much support there might be for true coastwide measures and noted that it may be difficult to apply some of the evaluated management procedures given the variation in performance across states.
    - Management Procedure 8 (true slot limit, 3 fish possession limit between 16-20 inches from May 1-September 30) may not be a viable option for coastwide measures. For example, anglers in New Jersey and Virginia have voiced support for allowing harvest of some fish larger than the slot limit. This option also had a slightly increased risk of overfishing compared to other options. Although this approach had some benefits, some MC members said the benefits did not seem to justify the slightly increased risk of overfishing.
- One MC member recommended reorganizing the state specific results in geographic order to more easily evaluate of how well each set of measures performed on a latitudinal/regional basis (i.e., north vs. south) which may help inform considerations for regional measures.
- One MC member asked if the impacts would differ from those presented if the implemented management procedure varied by state. Given that most management procedures outperformed 2019 measures, a mixed approach may still have benefits. However, this has not yet been evaluated.
- Some MC members questioned the realism of some management procedure results. For example, one MC member said it does not necessarily seem logical that under a reduced minimum size with no other changes (Management Procedure 2) the stock size would increase over time.
    - Staff responded that the stock doesn't grow under this management procedure but rather hovers around B_{MSY}. Hypothetically, decreasing the minimum size under Management Procedure 2 would shift recreational selectivity and likely lower the F_{MSY} proxy.

- Measures like the slot option can also change selectivity, focusing mortality on a narrower range, which generally pushes the stock lower relative to the biomass reference point.

Recreational Demand Model

Lou Carr-Harris (Northeast Fisheries Science Center; NEFSC) presented on the Recreational Demand Model (RDM), which has been developed for all three species. The RDM uses data from the NEFSC's 2022 Angler Choice Experiment Survey, Marine Recreational Information Program (MRIP) data, volunteer angler data, NOAA's 2016-2017 National Marine Recreational Fishing Expenditure Survey data, and statistical catch at age frequencies from the NEFSC stock assessments for all three species. The 2022 Angler Choice Experiment Survey provides data to estimate anglers' likelihood of taking a fishing trip based on the numbers of various species they would be expected to retain and discard as well as trip costs. The RDM couples anglers' estimated preferences with projections of availability of different size classes based on the most recent stock assessment and simulates projections for harvest under a specified set of management measures. This model was used to generate preliminary estimates of 2023 harvest and discards in weight under current measures for each species.

Questions and feedback from the MC were as follows:

- In addition to estimating harvest and discards, the RDM can also estimate angler welfare under modeled regulations (derived from the estimated willingness to pay for a particular trip). An MC member asked how sensitive the results were to input parameters, for example, cost per trip which has changed over time, as well as how the satisfaction values were calculated.
    - In the model, angler satisfaction or "utility" is calculated using (1) the estimated utility parameters from the behavioral model and (2) the expected catch and trip costs. This utility value is then translated to a probability of taking a trip. Angler satisfaction is not expressed as a percent satisfied value out of 100. For the cost per trip, while the presentation mentioned an example which was representative of the average trip across all modes, the simulation model actually draws from a wider distribution of variable trip costs. Trip costs derived from the 2017 marine expenditure survey and used in the model will be adjusted for inflation in subsequent model runs.
- The MC was interested to know how angler preferences have changed over the two angler choice surveys (i.e., the 2010 survey used in the first iteration of this model and the 2022 survey used in the recent update). Lou responded that a thorough comparison has not yet been completed. Preferences changed slightly, but the species rankings did not change (i.e., summer flounder was the most valuable, followed by black sea bass, then scup). The survey methods also varied slightly across the two surveys (e.g., the 2010 survey was conducted as an add-on to the shoreside intercept survey and had four versions across different regions that varied in the species presented to survey respondents, while the 2022 survey was conducted as a separate online survey and was uniform across regions).
- Discussion between the MC and the modelers clarified a few things about the configuration of the model:
    - The RDM incorporates information about the probability of taking a trip from the Angler Choice Experiment Survey. These probabilities are affected by the keep and release ratios for all fish. For example, the probability of taking a trip for

summer flounder considers the likelihood of catching scup and black sea bass as well. The regulations for all three species are interactive in terms of their effect on angler behavior.
    - The RDM does not incorporate preliminary 2022 MRIP data. The projections of 2023 harvest do not account for preliminary wave 1-4 2022 data and are calibrated on 2021 data.
    - The MC briefly discussed the weight/length relationships used in the RDM and recommended no changes. However, since the October 26 committee meeting, more recent black sea bass weight/length relationship data has been obtained and incorporated into the model.
- The MC discussed the need to consider confidence intervals and how they apply to the percent change approach. Based on preliminary RDM results presented at the meeting for estimated 2023 harvest, it was expected that most configurations of a confidence interval would result in the 2023 RHL falling outside (above for summer flounder and below for scup and black sea bass) that interval of expected harvest for all three species.
    - Lou clarified that the range of preliminary results presented may be narrower for black sea bass than the other species because the black sea bass results do not yet account for projected 2023 numbers at age and the associated uncertainty in those projections. It may be possible to incorporate these stock projections and provide revised results for the next MC meeting.
- The MC considered whether the model assumption that 100% of 2023 ABC would be caught is appropriate for all three species. The group agreed that this assumption is appropriate given challenges in predicting commercial and recreational dead catch. For example, although the scup and black sea bass recreational ACLs have recently been exceeded, there is not yet enough information to determine how the recently implemented restrictions in measures and other factors are impacting catch in 2022. In addition, the commercial ACLs have not been fully caught for these species in recent years. Both commercial and recreational catch are challenging to predict as they are impacted by a variety of factors other than management measures (e.g., market factors, availability, weather).

Recreational Fleet Dynamics Model

Corinne Truesdale and Jason McNamee (Rhode Island Department of Environmental Management) presented on the Recreational Fleet Dynamics Model (RFDM) for summer flounder, scup, and black sea bass. The RFDM is a shape constrained additive model that can be used to predict future harvest or discards based on historical recreational management measures and stock status variables. Stock status variables included spawning stock biomass, a lagged recruitment variable, and/or the RHL. For each species, discards and harvest were modeled separately. The variables included in each model varied based on which variables best fit the data and some modeler choices about the most logical variables to include. The model can simulate how state or coastwide level adjustments in bag, size, and season limits may affect landings and discards for each species. This model was used to generate preliminary estimates of 2023 harvest and discards (in numbers of fish) under current measures for each species.

The MC discussed the following considerations regarding the RFDM:

- The RFDM currently produces estimates in number of fish.

    - The model could be updated to pounds; however, this would be time consuming as it would require reconstruction of the model framework and datasets.
        - This would also require additional considerations about how to convert discards into weight because MRIP does not generate estimates of discards in weight.
        - It may be possible to make these revisions in a future year; however, given time constraints, it will not be possible to make these revisions in time for setting 2023 measures.
        - However, the model can still be used for 2023 with outputs in numbers of fish. The outputs in numbers of fish could be converted to weight using the average weight of landed and discarded fish.
- One MC member noted that the model results suggest increases in the black sea bass minimum size have been unsuccessful at constraining harvest, which is likely due to recent high availability.
    - Jason agreed with this comment and noted the model for black sea bass was particularly tricky which is why they truncated the dataset to better capture the current fishery.
    - For black sea bass discards, the model results show that increasing the minimum size initially increases discards up to a certain size limit, then beyond that size starts to decrease discards.
    - These harvest and discard results are likely an effect of the populations being so large during time periods when higher minimum size limits have been used, which is likely generating high harvest and discard numbers overall.
- The same MC member asked if the model showed any noticeable response in discards and harvest to changes in bag limits.
    - Jason noted that for black sea bass, increases in bag limits behave intuitively, with higher bag limits driving discards down.
- The RDFM can show outputs aggregated at the wave/state/year level.
    - It may be worth comparing the methods states typically use to set measures to the model results. However, this may require doing something similar to what the MSE team did to understand comparisons in a meaningful way, which will not be feasible for 2023.
        - Trying to mathematically recreate the approach used in recent years for setting measures is difficult but theoretically possible.

Continued Monitoring Committee Discussion and Next Steps

- One MC member said it will be important to use the same model through the entire process of determining how to adjust recreational measures. The use of one model for the first step and then switching to the other model for the next step may not be appropriate since the models could result in different outcomes at any step within the process.
- Another MC member agreed and said the MC, Council, and Board should select which model to use based on a clear justification, and evaluation of which model performs better, as opposed to a preferable outcome.
- The RFDM does not include 2020 and 2021 data. MC members voiced support for adding 2021 data but felt excluding 2020 data was appropriate given 2020 recreational harvest estimates were impacted by temporary suspension of shoreside intercept surveys due to the COVID-19 pandemic. NMFS used imputation methods to fill gaps in 2020

catch data with data collected in 2018 and 2019. Some imputation was necessary in 2021, but to a much lesser extent than in 2020.

- The modelers asked the MC for advice on a more fitting name for the Recreational Fleet Dynamics Model.

Public Comment

- An Advisory Panel (AP) member asked for clarification on the GARFO letter related to AMs and the agency's statement that no further reduction to recreational measures is needed.
    - The GARFO representative on the MC explained that more restrictive measures were put in place in 2022 due to overages in 2020 and 2021. The impacts of these adjustments have not yet been evaluated given incomplete 2022 data. The agency is not saying measures in 2023 should necessarily remain status quo, given the Percent Change Approach may call for a reduction. However, the previous (2022) reductions will satisfy the requirement of the AMs and no additional action beyond the specified percent change is needed because of the AMs.
- An AP member asked if there is any analysis that shows the number of times an angler has been surveyed or the number of times an angler retained a bag limit.
    - These data may exist in the MRIP intercept data, but it can get complicated since an intercept is often a boat of multiple anglers. The RDM produces trip-level estimates of harvest; however, the RFDM does not.
- An AP member commented that as the MC moves through this process it will be interesting to reconcile the need to reduce catches and high bag limits if those bag limits are usually not achieved.
- An AP member asked how the for-hire data used in the RDM were collected.
    - The 2022 Angler Choice Experiment Survey asks how many trips anglers took by charter, private, party, from shore, so there is some mode information. However, the for-hire mode is not modeled separately in the RDM.
- An AP member asked if the MSE analyzed which management procedures would best prevent overages, overfishing, and reduce discards.
    - Results demonstrate that some of the analyzed Management Procedures could reduce discards, and result in an increased abilities to retain fish. The analysis focused on catch in reference to overfishing reference points but did not examine performance compared to Recreational Harvest Limits or ACLs.
- A commercial fishing industry representative mentioned that New Jersey's summer flounder slot limit seems to be working well and asked if the MSE or any of the model's presented today could help analyze the effects of a slot limit including smaller sizes (e.g., reducing the lower bound of the slot to 16 inches) to see if it would further reduce discards.
    - This could be considered. It is up to individual states and regions to come up with measures to achieve the percent change required. It was also noted that the MSE has state specific results and one option evaluated was similar to New Jersey regulations.
- An AP member asked how the 2019-2021 overages which triggered an AM for scup and black sea bass compare to the ACLs under the recently revised allocations.

- The 2023 ACLs and RHLs account for the revised allocations. These ACLs could be compared to 2019-2021 catch based on information provided in the briefing materials for this MC meeting. However, this comparison will not be used to determine 2023 measures. Staff clarified that the process for setting 2022 measures will consider how expected 2023 harvest under 2022 measures compares to the 2023 RHLs.