SSC Reports
December 2022 SAFMC Meeting
SSC_Oct2022_REPORT_FINAL

Report of SSC Meeting
October 25-27, 2022

SSC Report To The Snapper Grouper Committee December 2022 SAFMC Meeting

SSC_Oct2022_REPORT_FINAL

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Release Mortality Reduction & Red Snapper (SG Regulatory Amendment 35)

- **Comment on the utility of using single hook versus double hook tackle for reducing catch rates in the snapper-grouper fishery**.
  - Issue is complex. Variety of single- and multiple-hook rigs used on trips targeting multiple species
  - Preliminary data suggest a small reduction in catch of red snapper when using a single-hook relative to a double-hook rig.
  - Observer data summary of for-hire (charter/headboat) anglers on east coast of Florida -> **only 8.5% use separate double hooks**. *Thus, a change to a single hook rig for this stakeholder group will not have a substantial effect on catch reductions.*

Release Mortality Reduction & Red Snapper (SG Regulatory Amendment 35)

- **Comment on the utility of using single hook versus double hook tackle for reducing catch rates in the snapper grouper fishery.**
  - Total number of double-hook vs. single-hook rigs used in the private recreational sector is unknown and is a critical piece of information to assess the overall impact of single vs. separate double hook rigs.
    - The majority of effort/landings is from private recreational fishery, emphasizing the need for information on their gear use practices.
    - If possible, add a question to the private recreational survey about use of one vs. two hook rigs. Answers to this question may be complicated because of nuances and variety in rig types used.

Snapper Grouper Management Strategy Evaluation (MSE) Update

- **Review MSE model structure, potential data inputs, and uncertainties:**
  - **What are the most important uncertainties in the fishery system?**
- Stakeholder response to management policies, such as reallocations
- Discards are not well-understood and are changing through time. This affects ability to predict fishing mortality

Snapper Grouper Management Strategy Evaluation (MSE) Update

- **Review MSE model structure, potential data inputs, and uncertainties:**
  - **What are the most important uncertainties in the fishery system?**
- Recruitment uncertainty is a pervasive challenge
- Interactions between species in a multi-species fishery, and which species to include in the multi-species MSE (stakeholders switching species).
- Data-limited species
- Spatial considerations

Snapper Grouper Management Strategy Evaluation (MSE) Update

- **Other recommendations:**
  - Incorporating co-occurrence of species, spatial/temporal differences in species, and differences among fleets
  - Investigate best time-steps to use in the model as they may differ by species (e.g. short- vs long-lived)
  - Consider Bayesian modeling as part of updating management strategies, inverse sampling for rare species, and VAR (vector autoregression) and time series modeling
  - Suggest consulting research recommendations from SEDAR stock assessment reports to determine what has and has not been addressed regarding uncertainties.

Snapper Grouper Management Strategy Evaluation (MSE) Update

- **What are the main data sources that can be used to evaluate the state of the fishery? What data not in the assessments would be helpful for the MSE?**
  - **What are the primary concerns with the data sources?**
- Level of detail needed for spatial analysis in MSE, including spatial distribution that is not integrated in stock assessments. (fishery-dependent and -independent)
- Socioeconomic data over time (fuel prices, unemployment rate, market prices)
- Stakeholder input from other sources in addition to APs – citizen science data, fishery performance reports. Be transparent of all different ways input is obtained.

Snapper Grouper Management Strategy Evaluation (MSE) Update

- **What are the main data sources that can be used to evaluate the state of the fishery? What data not in the assessments would be helpful for the MSE?**
  - **What are the primary concerns with the data sources?**

- Investigate catchability changes over time (assumed constant but potential for continuous increase due to advances in marine electronics and vessel positioning systems)

Snapper Grouper Management Strategy Evaluation (MSE) Update

- **What are the main data sources that can be used to evaluate the state of the fishery? What data not in the assessments would be helpful for the MSE?**
  - **What are the primary concerns with the data sources?**
- Changing environmental conditions affect all stocks in a multitude of ways. There is no background for magnitude and directionality in terms of distributions and abundances.
- Recommend SEP also provide feedback for MSE
- Recommend looking at the range of sensitivities from the stock assessments to inform configurations of MSE simulations and address uncertainties.

SSC Report To The Mackerel Cobia Committee December 2022 SAFMC Meeting

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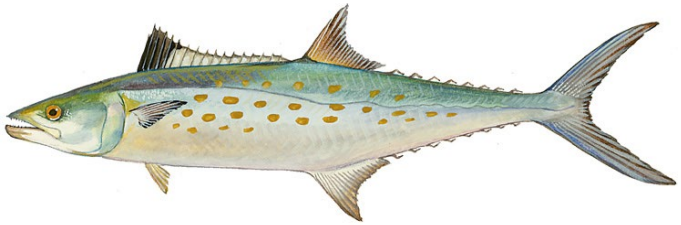
SSC Review of Revised Spanish Mackerel Operational Assessment

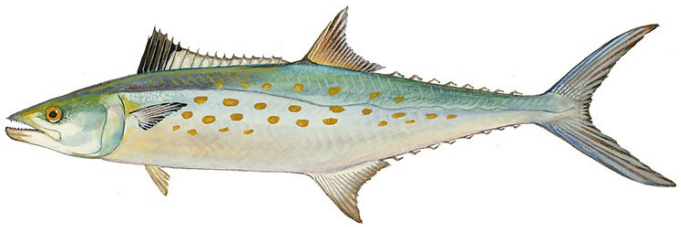
- The SSC discussed establishing general criteria for a threshold in PSE to be acceptable as we currently do not have one, although it has been discussed before.

- SSC recommends reviewing the MRIP calibrations document and National Acadamies of Science report at a future SSC meeting to address more global committee concerns (i.e. determine CV threshold). MRIP currently reports values with CV at 0.5 or less, estimates of 0.3 or higher with warning.



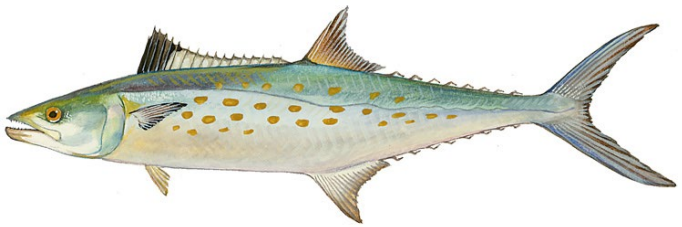
SSC Review of Revised Spanish Mackerel Operational Assessment

- Annual Spanish mackerel MRIP landing estimates have CVs less than or equal to 0.3 since 1986.
- Precision in 2020 similar despite perceived effects of the pandemic (e.g. imputation). SSC concerned that PSEs are biased low for these years.
- For species other than Spanish mackerel, look at other methods that remove data points which exceed a threshold of uncertainty or collapsing across frames to reduce PSEs across strata.



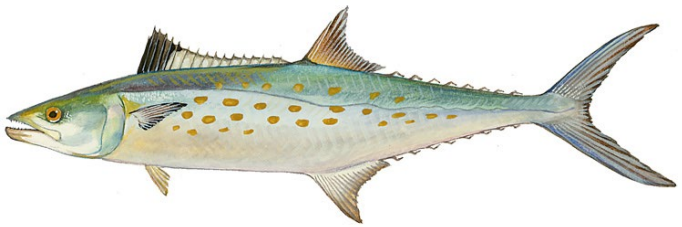
SSC Review of Revised Spanish Mackerel Operational Assessment

- For Spanish mackerel, pull specific MRIP data from suspect modes/waves/areas to get estimates with PSEs. Compare estimates between recreational shore mode vs. recreational private boat mode. For example, there is a high PSE for the shore/inland mode estimate of harvest in 2020, and that harvest value makes up a substantial fraction of the 2020 total harvest.
- In addition to concerns with recreational catch data, the SSC expressed concern with lack of age composition data in both fishery sectors, uncertainty in max age, plus groups, and uncertainty in natural mortality demonstrated by the likelihood profile.
- Prior to 2020, trends in F/Fmsy appeared to have been declining, and B/Bmsy appeared to have been increasing; that trend changed with a much higher estimate of harvest in 2020.



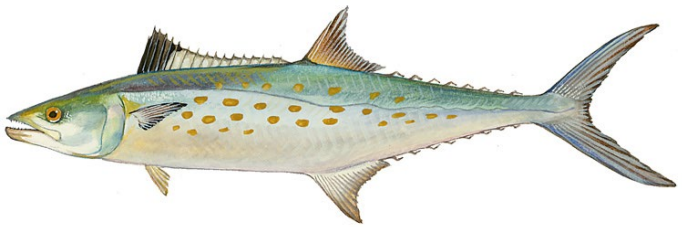
SSC Review of Revised Spanish Mackerel Operational Assessment

- A revised operational assessment will be generated by the SEFSC that addresses the concerns outlined during recent SSC meetings.
- If MCBEs can be re-run, recommend using revised OA model for ABC setting in spring 2023. If changes in terminal year or substantial changes to current OA occur, would require addition to the SEDAR schedule and specifying TORs for next OA.
- Alternative methods in setting ABCs and projections could be investigated if necessary.



SSC Review of Revised Spanish Mackerel Operational Assessment

- Subgroup task:
- Task: Review *M*, MCBE distributions and likelihood profiles, growth models, steepness.
- Consult likelihood profiles, estimates of natural mortality for congeners from other regions worldwide (*M* = 0.49-0.54), and Then et al. 2015 or other estimators of *M* to inform analyses. Current base *M*=0.35 and range=0.3-0.42.



SSC Review of Revised Spanish Mackerel Operational Assessment

- Subgroup members & timeline:

  - Sub-group members: Yan Li, Dustin Addis, Marcel Reichert, Eric Johnson, with participation by SEFSC analysts
  - Sub-group meets Dec 14th to determine TORs for OA model re-runs for the SEFSC
  - January 20th webinar: Full SSC review of sub-group findings.
  - Request SEFSC perform analysis.
  - Review results of model re-runs and new projections for setting ABC at April SSC meeting.