SSC Reports
September 2022 SAFMC Meeting
SSC_Aug2022_REPORT_FINAL.pdf

Report of SSC Meeting
August 4, 2022

SSC Report To The Snapper Grouper Committee September 2022 SAFMC Meeting

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Report of SSC Meeting
August 4, 2022

Yellowtail Snapper Interim Analysis

Brief background

- Yellowtail Snapper had a benchmark SEDAR 64 stock assessment with a 2017 terminal year
  - SA and GOM SSCs met in summer 2020 and set a P*=0.375 based on SEDAR 64

- This interim analysis applied updated landings and discard data to the S64 base model for 2018-2020

- SA and GOM SSCs were asked to provide feedback on projections and uncertainties, and make catch level recommendations

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Yellowtail Snapper Interim Analysis

Review Interim Analysis

- The interim analysis addressed all the TORs to the SSCs satisfaction

- There were no issues with the interim analysis that would prevent it from providing fishing level recommendations

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Yellowtail Snapper Interim Analysis

Is the interim analysis consistent with best scientific information available?

- Yes, the Interim Analysis is consistent with BSIA as specified by the TORs for this assessment.

- However, the interim analysis process has not yet been vetted by the SA-SSC. The SA-SSC is awaiting further information and evaluation to determine under what circumstances interim analyses can be considered BSIA.

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Yellowtail Snapper Interim Analysis

Research recommendations

- Compare the different types of interim analyses provided by the SEFSC and the FWC.
- Update indices (as these were not updated in this interim analysis).
- Update MRIP catch per trip estimates
- Re-emphasize previous research recommendations from S64 Benchmark assessment review

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Yellowtail Snapper Catch Level Recommendations

Increased level of uncertainty surrounding the use of *P** from the benchmark assessment for IA because:

- Time elapsed since setting the *P** from the benchmark assessment (~2 years)
- The projections did not account for discards

The SSCs had considerable discussion about reducing P* given the above considerations.

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Yellowtail Snapper Catch Level Recommendations

- The SSCs recommend setting OFL at the yield achieved at F30%SPR and ABC at the yield achieved at P* = 0.375

- P* was unchanged, but recommend Council select ACL or ACT to account for additional uncertainty that is described above (90% or 75% of F30%SPR)

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Yellowtail Snapper Catch Level Recommendations

Table 1 Page 7 –

Millions of pounds

Year	$F_{30\%SPR}$ (OFL)	P* = 0.375 (ABC)	90% of $F_{30\%SPR}$	75% of $F_{30\%SPR}$
2023	3.922	3.887	3.733	3.432
2024	3.774	3.749	3.635	3.401
2025	3.684	3.665	3.576	3.385
2026	3.625	3.610	3.537	3.375
2027	3.584	3.572	3.510	3.367

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SSC Report To The Mackerel Cobia Committee September 2022 SAFMC Meeting

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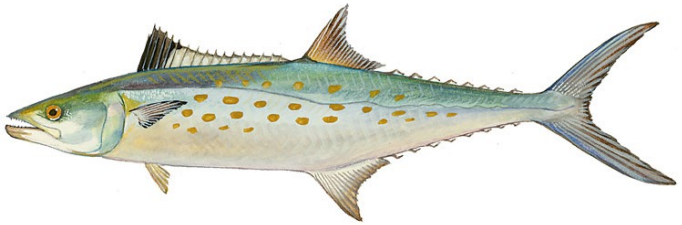
Report of SSC Meeting
August 4, 2022

SSC Review of Spanish Mackerel Operational Assessment

Outline

- General comments
- Review Assessment; Is assessment BSIA?
- Identify, summarize, and discuss assessment uncertainties
- Review the assessment projections
- Research recommendations
- Consensus statement



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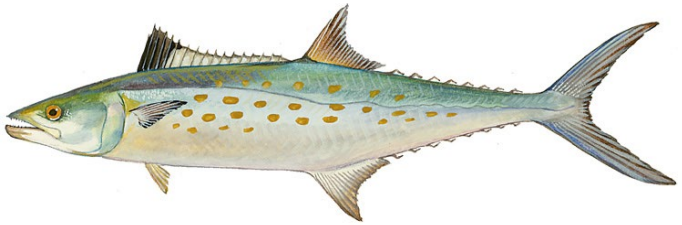
SSC Review of Spanish Mackerel Operational Assessment

SSC General Comments

- Age comps are not accounted for in the assessment for all sectors (e.g. few age comps for commercial cast net and commercial handline).

- Substantial regional differences in how fishery is prosecuted, and lack of adequate sample sizes across sector type create large data gaps in the assessment.

- Several data (e.g. MRIP data) and model inputs (e.g. natural mortality, steepness, selectivity) that need to be explored more thoroughly.



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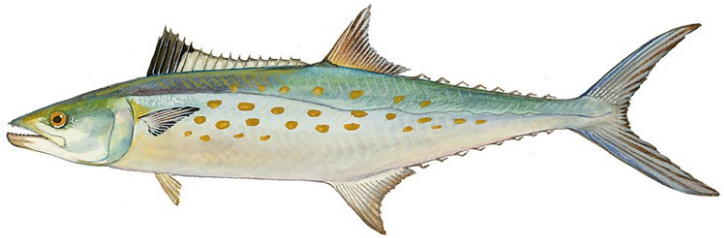
SSC Review of Spanish Mackerel Operational Assessment

- **SSC General Comments**

  - 10 years since last assessment. Given the time since the last assessment, further flexibility should have been provided for the operational assessment to make updates. Given this, a research track should be considered for next assessment.



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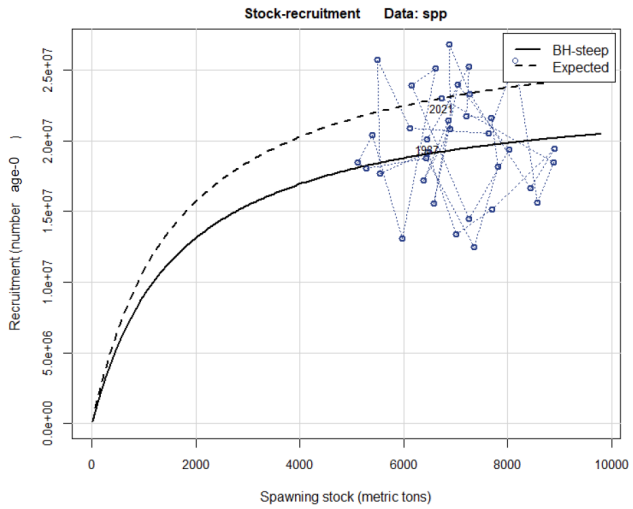
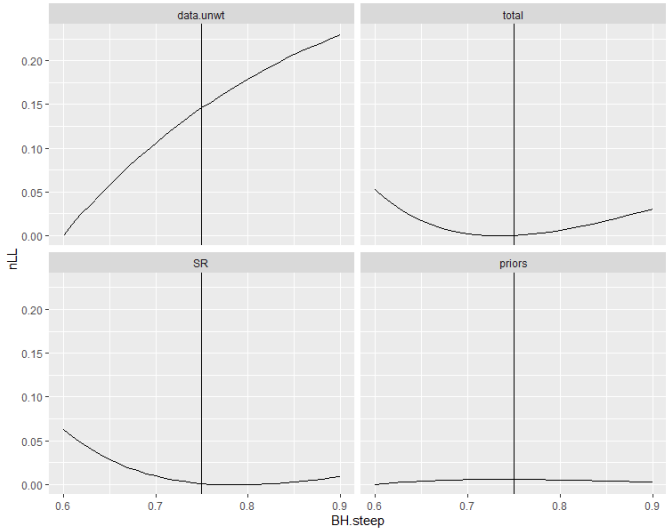
SSC Review of Spanish Mackerel Operational Assessment

- **Review assessment**
  - The stock-recruitment (SR) data did not allow for an updated estimate of steepness in SEDAR 78.
  - Steepness estimates from similar species do not appear to be available.
  - The steepness value (0.75) used in the SEDAR 78 (same as SEDAR 28) has high uncertainty as indicated by likelihood profiles.





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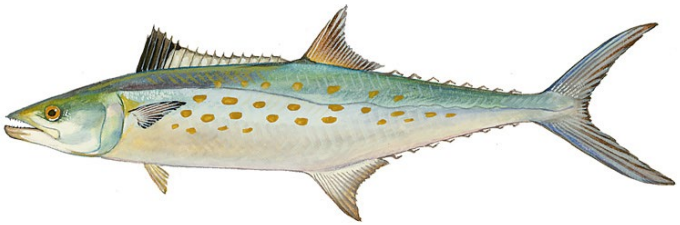
SSC Review of Spanish Mackerel Operational Assessment

- **Review assessment (cont.)**

- There was an increase in recreational catch in 2020.
- Given that a 3-year average of fishing mortality was used, the 2020 estimate of catch is not currently influential to stock status; however, given that the 2021 estimate of catch is similar or larger, the 3-year average may begin to affect stock status in the next few years.
- In contrast, the 2020 estimate does, already, affect projections. During the pandemic, total fishing effort was increased, which indicates that the increases in catch seen for Spanish mackerel are not unexpected.



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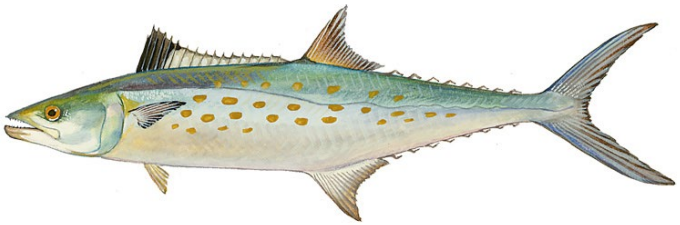
SSC Review of Spanish Mackerel Operational Assessment

- **Review assessment (cont.)**
  - The model's estimates of stock size are going down in recent years while the observed landings are increasing.
  - The increased landings could be driving the population down but there is uncertainty if this is the case given information provided during public input that suggests the potential for an increased stock size that could promote greater landings with no change in effort (e.g. questions about the accuracy of recent MRIP data, commercial quotas being met earlier in year during recent years).
  - MRIP shore-mode landings (these were higher than private boat mode) appear to be important and driving changes in increased recreational landings.



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SSC Review of Spanish Mackerel Operational Assessment

- **Does the assessment represent BSIA?**
- The constraints of the OA and the poor quality/lack of data were a concern.
- Data/assessment concerns include:
  - There is a concern that projections are not sufficiently robust. Projections (unlike current stock status) are influenced greatly by terminal year (2020), and terminal year is highly uncertain.
  - The assessment model is estimating a decrease in spawning stock size as a result of the increases in catch and this is driving need for future catch reductions in the projections; however, other sources of evidence suggests that the stock size could be increasing.

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SSC Review of Spanish Mackerel Operational Assessment

- **Does the assessment represent BSIA?** (Cont.)
- Data/assessment concerns include:
  - The declining trend in biomass estimated by the OA was not reflective of what stakeholders described or observed in fishery-independent data sampling further north (NEAMAP).
  - Not clear that the current sampling program represents the current geographic distribution of the fishery (increased occurrences to the north suggests that the stock boundaries may have shifted).
  - There were questions regarding the recreational landings in recent years, especially shore-based mode (What is driving the increase in shore landings in recent years? Is it real?).
  - There have been large changes in the fishery (e.g. commercial cast-net/handline landings have increased in importance), but large portions of the OA are based on the 2012 SEDAR 28 Benchmark that is now over a decade old.

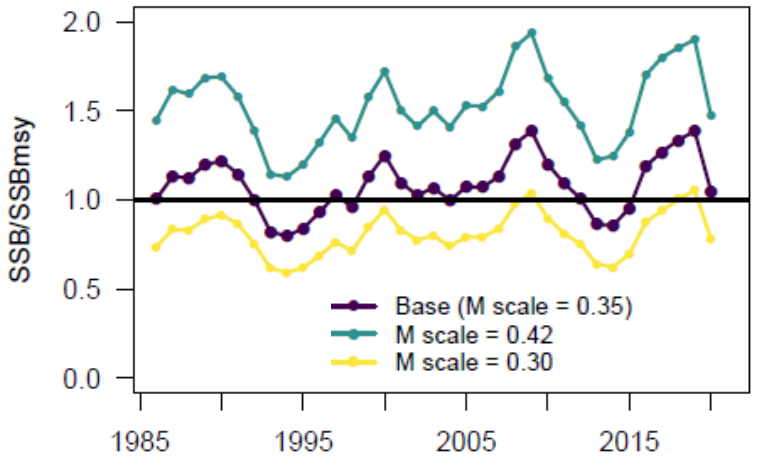
SSC Review of Spanish Mackerel Operational Assessment

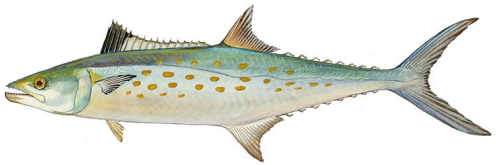
- **Does the assessment represent BSIA?** (Cont.)
  - SEDAR 78 was sensitive to the same parameters as those found for SEDAR 28:
    - natural mortality-affected by changes made to growth model
    - estimates of parameters (t0) of von Bertalanffy growth curve
    - steepness
  - Jumps in recreational landings may reflect increases in recreational effort, increases in stock size, or a combination of both.
  - Over the last several years, commercial fisheries have been meeting quotas earlier in the year: is this because of increased effort or increased stock size?

SSC Review of Spanish Mackerel Operational Assessment

Identify, summarize, and discuss assessment uncertainties

- Steepness and natural mortality are uncertain:
  - Steepness not estimable, and was fixed based on SEDAR 28.
  - Natural mortality was fixed based on SEDAR 28.
    - Natural mortality was found to have a significant impact on stock status. Likelihood profiles showed that natural mortality could be much higher (>0.5), which, if true, would indicate stock size is higher than currently estimated.





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SSC Review of Spanish Mackerel Operational Assessment

Identify, summarize, and discuss assessment uncertainties (Cont.)

- Lack of adequate representation of length and age samples from each fishery (most fleets) to inform fishing mortality.
- Uncertainty of the shrimp bycatch estimates was high (pdf pg 73). The observer coverage is extremely sparse and effort data are questionable.
- Lack of a pelagic fishery independent index of adult abundance
- Commercial handline index fits were poor (severe underfitting/overfitting)
- Model ignored initial year of MRIP CPUE index (which was a relatively extreme value)

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SSC Review of Spanish Mackerel Operational Assessment

Identify, summarize, and discuss assessment uncertainties (Cont.)

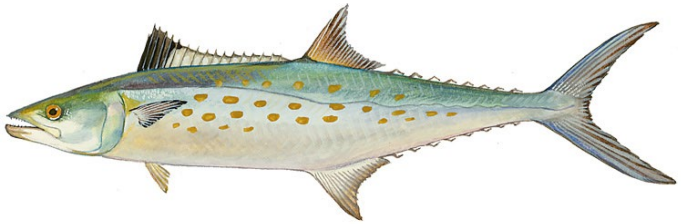
- How did the interruptions in MRIP sampling impact 2020 estimates and their uncertainty?
    - Somewhat addressed due to imputations used by MRIP to account for reduced sampling in 2020. The influence of the lack of SEAMAP 2020 YOY index data and the value of 2020 MRIP data will be difficult to determine until additional years of data are collected. We must evaluate the congruencies or incongruencies of these data to previous or future years' data.

SSC Review of Spanish Mackerel Operational Assessment

Review the assessment projections

Do the projections and interim assumptions adequately capture uncertainty in the model and data? Uncertainty in recruitment?

- No, the SSC has several concerns with the assessment, including:
  - Commercial age sampling possibly inadequate
  - MRIP – high PSEs, uncertainty in terminal year data point
  - Influence of bad fit to initial year General Recreational Index on SSB
  - Uncertainty in steepness
  - Model likelihood profiling points to potentially higher natural mortality
  - YOY index missing terminal year data (2020 SEAMAP)
  - Effect of removing early years with higher landings



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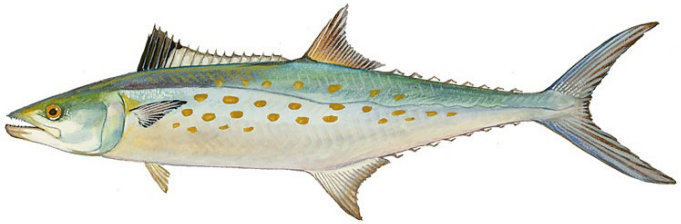
SSC Review of Spanish Mackerel Operational Assessment

Review the assessment projections (Cont.)

Are the projected *F* rates in 2021-2022 reflective of the fishery?

- Given the concern with this OA, more attention should be paid to 2021-2022 MRIP estimates used in projections given the large sudden change in magnitude. Major source of uncertainty in setting catch levels.
- Would indicate a large increase in shore-based effort, which may or may not be realistic. With COVID, perhaps more shore-based angler effort, but in 2022 inflation may have decreased angler effort – to be determined. More investigation is needed.



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SSC Review of Spanish Mackerel Operational Assessment

Review the assessment projections (Cont.)

Pending SSC decision to accept the assessment for mgmt.:

ABC-CR Dimension Tiers for SEDAR78:

I. Assessment Information - Tier 2 (2.5%)

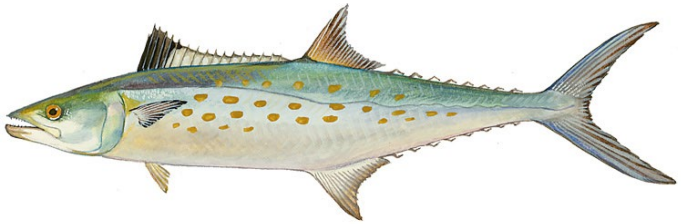
II. Uncertainty Characterization - Tier 2 (2.5%)

III. Stock Status - Tier 1 (0%)

IV. Productivity and Susceptibility (PSA) – Risk Analysis - Tier 2 (5%)

Total ABC adjustment = 10.0%

P-star value = 40.0%



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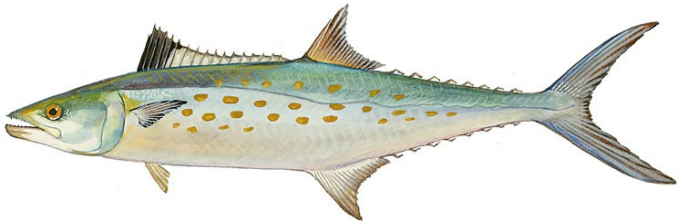
SSC Review of Spanish Mackerel Operational Assessment

Research recommendations

- The research recommendations that will most likely reduce risk and uncertainty in the next assessment include those that address the issues with SEDAR 78 described above (e.g. steepness, natural mortality, age comps).
- Based on public comments from commercial fishermen and NEAMAP data, the stock may be moving northward, so research on stock distribution is warranted
- Recreational discards – better characterization of age/size composition and mortality of discarded fish



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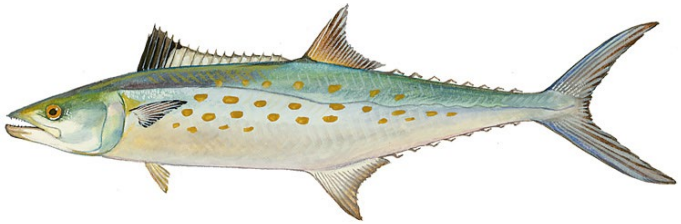
SSC Review of Spanish Mackerel Operational Assessment

SSC Consensus Statement

- The SSC has several concerns with this OA before deeming consistent with BSIA:
  - The assessment model is appropriate, but inputs need to be more thoroughly investigated.
  - There are several concerns with certain aspects of the data quality that should be more thoroughly investigated before setting catch level recommendations
  - The operational assessment TORs constrained the modeling approach and there could be alternative data inputs that would benefit future assessments (something for future deliberation by the SSC)



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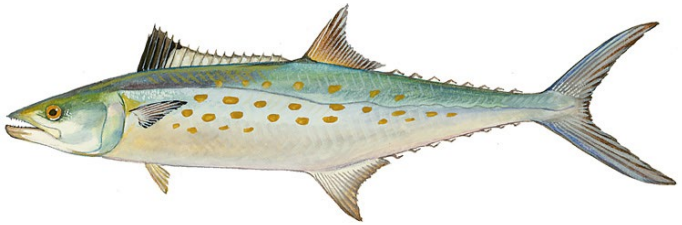
SSC Review of Spanish Mackerel Operational Assessment

- **SSC Consensus Statement** (Cont.)
  - Stock status classification has great deal of uncertainty because of terminal year data; this uncertainty leads to little confidence in projections.
  - Specific investigations into certain data inputs or model components should occur before management advice can be provided:
    - Technical group/subset of SSC members to compile specific list of recommendations to the SEFSC to improve upon assessment in order to achieve stock status determination and catch level recommendations.
    - Current members: Dustin Addis, Marcel Reichert, Yan Li



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