# SSC Reports
# June 2023 SAFMC Meeting
## SSC_SEP_Apr2023_REPORT_FINAL

Report of SSC Meeting
April 19-21, 2023

# SSC Report To The Mackerel Cobia Committee June 2023 SAFMC Meeting

**SSC_SEP_Apr2023_REPORT_FINAL**

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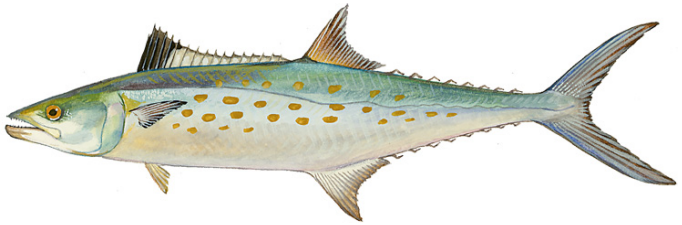
# SSC Review of Revised Spanish Mackerel Operational Assessment

- The SSC's requests for modifications to SEDAR 78 were not made because of center workload issues.
- SSC was asked to set ABC from SEDAR 78
- However, the SSC's concerns with this assessment and natural mortality are still significant and were discussed extensively during our April 2023 meeting.

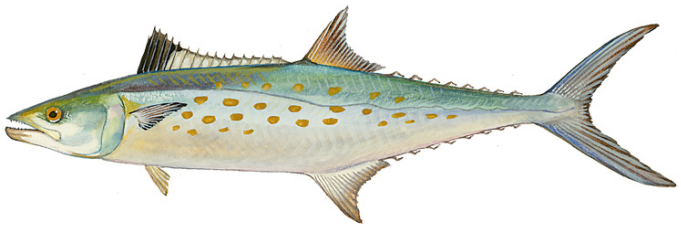


# SSC Review of Revised Spanish Mackerel Operational Assessment

- The SSC expresses disappointment that the Center was unable to conduct the requested analyses for SEDAR 78
- The SSC requests that arrangements for future assessment reviews should continue to provide the SSC the opportunity to request additional analyses or modifications to the assessment, as has been normal practice.
- Often, such analyses and modifications lead to improved catch advice. Equally as important, they enhance trust in the scientific advice process among Council members and stakeholders.
- The SSC has enjoyed a long history of working collaboratively and collegially with stock assessment scientists to provide the best possible, mutually agreed advice and hopes to continue to do so going forward.

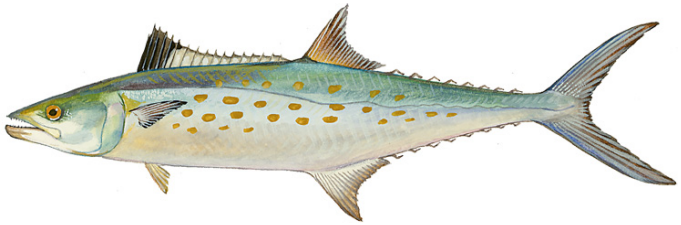
# SSC Review of Revised Spanish Mackerel Operational Assessment

- SSC accepted the assessment base run as the basis for stock status determination but recommends that natural mortality (and other raised issues) should be investigated in the next assessment.
- The SSC concluded that the stock status determination in the Spanish Mackerel assessment base run is likely conservative because of the use of lower natural mortality.



# SSC Review of Revised Spanish Mackerel Operational Assessment

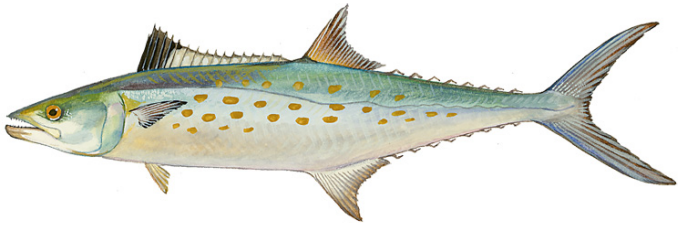
- The SSC considered the above as justification to deviate from its control rule for setting ABC. The options discussed were 3rd highest landings (has shown poor performance in the literature), Yield at 75%Fmsy, equilibrium OY. The SSC was most comfortable with using the Yield at 75%Fmsy.



# SSC Review of Revised Spanish Mackerel Operational Assessment

- SEDAR78 is sufficient for providing stock status (not overfished, not overfishing).

- SEDAR78 is sufficient for also providing catch level recommendations using model output but not projections.



# SSC Catch Level Recommendations for Spanish Mackerel

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| Criteria | Deterministic | Probabilistic |
|---|---|---|
| Overfished evaluation ($SSB_{2020}/MSST$) | 1.40 | 1.42 |
| Overfishing evaluation ($F_{2018\text{-}2020}/F_{MSY}$) | 0.77 | 0.74 |
| MFMT ($F_{MSY\ proxy}$) | 0.516 | 0.523 |
| $SSB_{MSY}$ (metric tons) | 6406 | 6410 |
| MSST (metric tons) | 4804 | 4808 |
| MSY (1000 lbs.) | 8210 | 8351 |
| Y at 75% $F_{MSY}$ (1000 lbs.) | 8024 | 8158 |
| ABC Control Rule Adjustment | 10% | |
| P-Star | 40% | |
| M | 0.35 | |

**OFL RECOMMENDATIONS**

| Year | Landed (lbs ww) | Discard (lbs ww) | Landed (number) | Discard (number) |
|---|---|---|---|---|
| 2023 | 8,210,000 | | | |
| 2024 | 8,210,000 | | | |
| 2025 | 8,210,000 | | | |
| 2026 | 8,210,000 | | | |
| 2027 | 8,210,000 | | | |

**ABC RECOMMENDATIONS**

| Year | Landed (lbs ww) | Discard (lbs ww) | Landed (number) | Discard (number) |
|---|---|---|---|---|
| 2023 | 8,024,000 | | | |
| 2024 | 8,024,000 | | | |
| 2025 | 8,024,000 | | | |
| 2026 | 8,024,000 | | | |
| 2027 | 8,024,000 | | | |

# SSC Report To The Snapper Grouper Committee

## June 2023 SAFMC Meeting

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# Atlantic Scamp/Yellowmouth (SG Regulatory Amendment 55)

**Review additional requested rebuilding projections and timelines.**

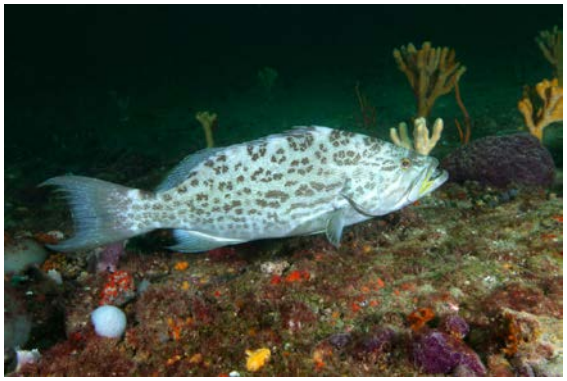
- $T_{max}$ (maximum time to rebuild) unable to be determined because all long-term scenarios had equal merit.
- If recruitment returns to long-term average, rebuilding within 10 years is possible; however, if recruitment stays low, then rebuilding will never happen. These concerns also apply to Black Sea Bass.

# Atlantic Scamp/Yellowmouth (SG Regulatory Amendment 55)

**Complete the fishing level recommendations table.**

- ABC = Use Scenario 7 (Table 6), F=75%F40% with recent average (low) recruitment for setting ABC.

- OFL = F40% with long-term average recruitment.



# SSC Catch Level Recommendations for Scamp

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| Criteria | Deterministic | Probabilistic |
|---|---|---|
| Overfished evaluation ($SSB/MSST_y$) | 0.36 | 0.38 |
| Overfishing evaluation ($F/F_{MSY\ proxy}$) | 0.91 | 0.81 |
| MFMT ($F_{MSY\ proxy}$) | 0.28 | 0.30 |
| $SSB_{MSY}$ (metric tons) | 1503.87 | 1540.65 |
| MSST (metric tons) | 801.60 | 801.14 |
| MSY (1000 lbs.) | 372.28 | 381.39 |
| Y at 75% $F_{MSY}$ (1000 lbs.) | 344.83 | 353.68 |
| ABC Control Rule Adjustment | 20% | |
| P-Star | 30% | |
| SSC recommended $P_{Rebuild}$ | 70% | |
| M | 0.155 | |
| Generation Time | ~ 10 years | |

**OFL RECOMMENDATIONS**

| Year | Total Removals (lbs ww) | Discard (lbs ww) | Total Removals (numbers) | Discard (number) |
|---|---|---|---|---|
| 2025 | TBD | | | |
| 2026 | | | | |
| 2027 | | | | |
| 2028 | | | | |
| 2029 | | | | |

**ABC RECOMMENDATIONS**

| Year | Total Removals (lbs ww) | Discard (lbs ww) | Total Removals (numbers) | Discard (number) |
|---|---|---|---|---|
| 2025 | 71,000 | | 12,000 | |
| 2026 | 76,000 | | 12,000 | |
| 2027 | 79,000 | | 13,000 | |
| 2028 | 82,000 | | 13,000 | |
| 2029 | 84,000 | | 14,000 | |

**Note: Total Removals includes landings plus dead discards*

# Atlantic Scamp/Yellowmouth (SG Regulatory Amendment 55)

- **Describe potential methods to develop an ABC for the Shallow Water Grouper Complex that can be developed in the timeline associated with the amendment.**

- *Remove yellowmouth ABC from Shallow Water grouper complex total ABC and retain MRIP-CHTS units for remaining species in the complex until the Unassessed Stocks workgroup convenes to come up with new ABCs using MRIP-FES units.*

# SSC Report To The Snapper Grouper Committee

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# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

**The SSC agrees that the assessment:**

- appropriately addresses ToRs
- is BSIA
- reliably captures past trends in the fishery and population, and*
- provides a reliable, quantitative estimate of current stock status**.

# SSC Review of SEDAR 76
# Operational Assessment – Black Sea Bass

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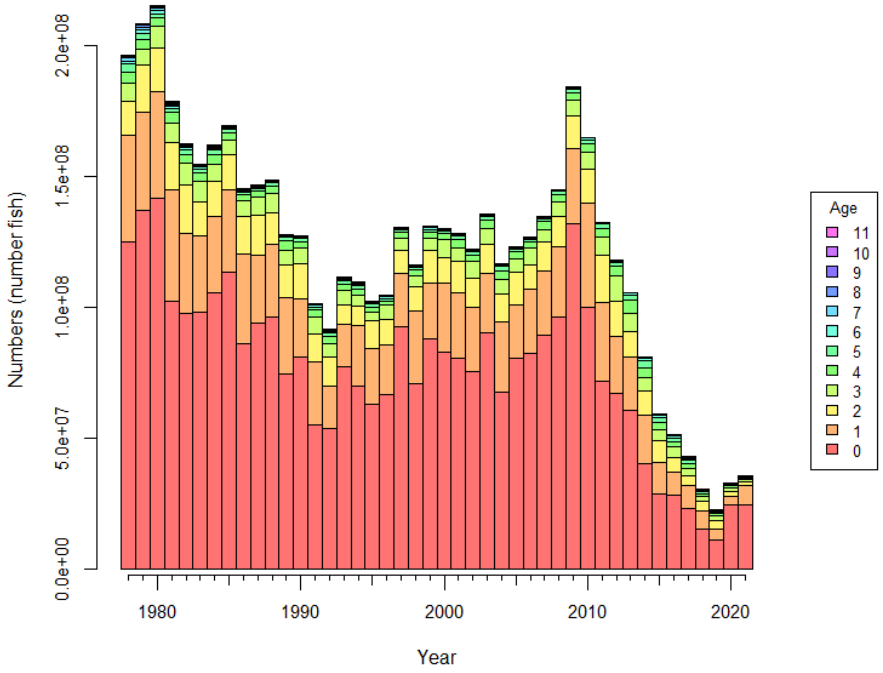


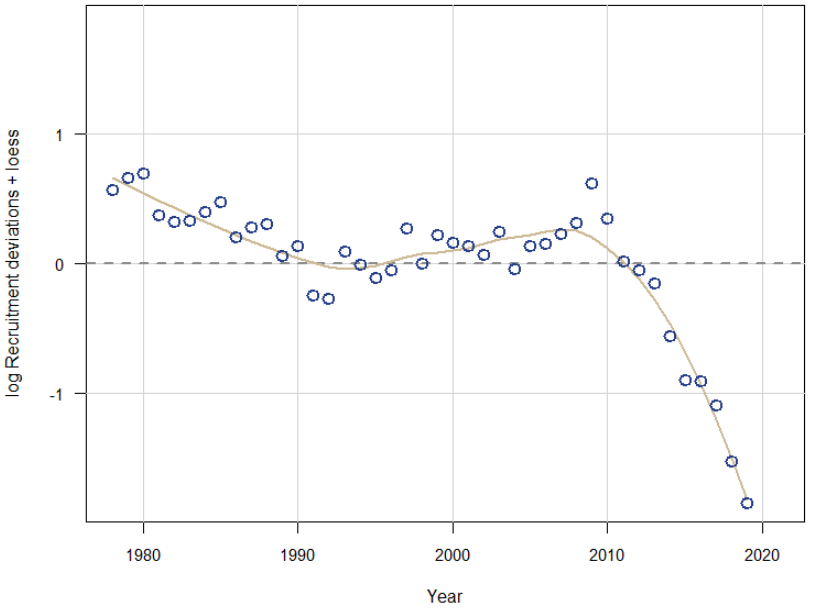


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# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

- **Here, $F_{msy}$ equals $F_{max}$ (the $F$ at which maximum yield per recruit is achieved)
- Represents an overestimate of true $F_{msy}$ because it assumes constant recruitment even when SSB drops
- To account for this risk, the SSC recommended that stock status and projections be based on $F_{0.1}$
- $F_{0.1}$ is the fishing mortality rate where the slope of the yield per recruit curve is 10% of the slope of the curve at its origin

# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

- Does the assessment provide reliable predictions of future conditions to support fishing level recommendations?
  - Projections of discards (Table 24 from sedar 76 stock assessment report) show much higher estimates (~4x) than the last two years (2020-2021) of observed discards (Table 18 from sedar 76). The SSC discussed this concern and recommended using average *F* instead of average landings in the interim years.

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# SSC Review of SEDAR 76
# Operational Assessment – Black Sea Bass

- Review, summarize, and discuss the factors of this assessment that affect the reliability of estimates of stock status and fishing level recommendations.

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# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

- Review, summarize, and discuss ….
  - Key factors that affect reliability:
    - uncertainty in recruitment,
    - discard rates and discard mortality,
    - whether there has been a regime change.
  - Use male and female spawner biomass in future assessments and projections (current use of egg production may not be best measure)
  - Reliance on a single index of abundance (SERFS) in latter part of assessment

# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

- **Describe the risks and consequences of the assessment uncertainties….**
  - Large uncertainty in *F* driven by uncertainty in natural mortality and discard mortality
  - Nevertheless, there is very high confidence that the stock is currently experiencing overfishing (*F* too high)
  - Uncertainty in recruitment in developing catch advice is a key factor-> recent declines in recruitment are critical to fishing level recommendations and perhaps the future long-term viability of stock even in the extreme case of *F* = 0

# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

- **Are methods of addressing uncertainty consistent with SSC expectations and the available information?**
  - Yes, the methods of addressing uncertainty are consistent with SSC expectations and the available information and reflect the Best Scientific Information Available. Specifically, the staff is to be commended for employing state-of-the-art Monte Carlo / Bootstrap Ensemble (MCBE) methodology.

# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

- **List (in order of the greatest contribution to risk and overall assessment uncertainty) and comment on the effects of those assessment factors that most contribute to risk and impact status determinations and future yield predictions.**

  - (1) low recruitment--key to determining the long-run viability of the stock, even with F = 0.
  - (2) discard mortality--key driver of uncertainty in F
  - (3) natural mortality--key driver of uncertainty in F

# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

**Apply the ABC control rule. Discuss and make recommendations on probability of rebuilding projections.**

- Tier 1. Assessment Information: 2. Reliable measures of exploitation or biomass; no MSY benchmarks, proxy reference points (2.5%)
- Tier 2. Uncertainty Characterization: 2. High – reflects more than just uncertainty in future recruitment (2.5%)
- Tier 3. Stock Status: 4. Stock is both overfished and overfishing (7.5%)
- Tier 4. Productivity and Susceptibility: 2. Medium Risk. Moderate productivity, vulnerability, and susceptibility (as in previous assessment; 5%)
- Total: 17.5%
- P*: 32.5%
- Probability of Rebuilding (1-P*): 67.5%

# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

**Apply the ABC control rule. Discuss and make recommendations on probability of rebuilding projections.**

- Fixed *F* for the interim years, with *F* being the average of the last three years of the time series.
- Allow *F* from discard fleet to remain constant.
- Use both recent average and long-term average recruitment in projections.
- Consider all available information regarding actual landings and discards for 2022
- OFL Projection using $F_{0.1}$ instead of $F_{max}$ for $F_{MSY}$ proxy with long-term average recruitment
- ABC projection using recent (2014-2019) average recruitment and *75%** $F_{0.1}$

# SSC Review of SEDAR 76
# Operational Assessment – Black Sea Bass

**Research recommendations:**

- Natural mortality
- Discards and discard mortality, including length information
- How best to measure spawning biomass (females only, females plus males, etc.)
- Biological samples from the recreational fishery to obtain better age comps.
- Research on mechanisms of low recruitment, regime shift
- Effects of fishing mortality on changes in sex ratios, size at sex transition, and female spawning stock biomass.
- Monitoring annual distributional changes and sex-specific age/length comps
- Predation and/or competition with other species
- Development of juvenile index of abundance
- Explore time series techniques in an effort to reduce uncertainty in projections

# SSC Review of SEDAR 76
# Operational Assessment – Black Sea Bass

**Guidelines for next assessment:**

- Conduct an interim analysis to provide an updated indication of stock health and potential recruitment trajectory.
- Examine CVID index, landings, or discards, to determine if substantial changes have occurred to inform whether a new assessment is warranted (see SAFE report).
- Timing – within 5 years from terminal year of previous assessment or to be adjusted based on results of interim analysis.
- Type – Operational (with flexibility to explore model structure changes).

# SSC Review of SEDAR 76 Operational Assessment – Black Sea Bass

**SSC recommendations:**

- The SSC is deeply concerned not just with biomass status and low recruitment trends of Black Sea Bass, but also concurrently occurring shallow water snapper and grouper species such as Red Grouper, Red Porgy, Scamp, and Gag.
- The SSC supports the use of increased education to reduce dead discards (e.g., usage of descending devices).
- However, improved release practices that increase survival of discards are not sufficient to reduce overall discard mortality.
- The Council needs to consider additional strategies to reduce discarding by limiting interactions and thus promote rebuilding through effort reduction.

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# Other SSC Recommendations

# FWC Gear Type Analysis

- **Discuss if the FWC gear type study can be considered informative for quantifying discard reductions in the snapper grouper fishery.**

  - Yes, the FWC gear type study is informative with caveats, most notably we do not know the universe of anglers using 2 vs 1 hook gears for the region.
  - Additionally, there is a potential tradeoff for species. For example, there was a reduction in catch of red snapper when using a one-hook rig (benefit for red snapper) but an increase in catch of grouper species (negative for grouper species). All changes in regulations should consider unintended consequences.
  - The SSC is uncertain how this information will be incorporated into the amendment and could not comment further on the Amendment itself. Because data are missing regarding the proportion of fishers that use 2-hook rigs, the SSC cannot quantify the potential for discard reductions.

# FWC Gear Type Analysis

- **Determine if the information from the three studies on single hook and multihook rigs provides evidence that Red Snapper catches would be reduced using single hook rigs.**
  - Yes, for Red Snapper, but the catch of grouper species exhibited different results. Again, unintended consequences should be considered.
  - The FWC gear type study was conducted on the west Florida shelf and potential geographic differences may exist.

# COVID-19 Pandemic Impacts

**Discussion Questions:**

- Given the unusual fishing behavior exhibited during the pandemic, does the SEP have recommendations for how staff should consider data from 2020/2021 when conducting analysis for the purposes of management?
- Based on the study, what aspects of pandemic impacts are likely to continue to persist into the future (such as participation rates, loss of infrastructure, movement of commercial landings to online sales or “dock to dish”, etc.)?

# COVID-19 Pandemic Impacts

- The SEP's discussion focused on two relevant topics related to both commercial and recreational fisheries.
- There was acknowledgement that the data were atypical, but it was unknown how long the effects of the pandemic were going to affect fisheries datasets or how they were going to affect the data. Based on the discussions, the SEP's recommendation was to use the 2020/2021 data for now, but to monitor it in the future for long term trends to see whether the topic ought to be revisited as the effects of the COVID-19 Pandemic are still affecting fisheries. Similar issues occurred in the aftermath of the Great Recession/Financial Crisis of the late 2000s.

- The SEP is unable to forecast future trends.