

**Species:**

Gag Grouper

**Model and Additional Data Years:**

- Prior Assessment: SEDAR 71 Gag Operational Assessment
- Prior Terminal Year: 2019
- OA Terminal Year: 2024, adding 5 years of new data
- Apply the current BAM configuration.

**Requested Data Updates (Please be as specific as possible):**

- Include any new and updated information on life history, discard mortality, and steepness.
- Explore using appropriate CVs for the landings data to capture the uncertainty in the model results.

**Requested Model Modification to previously approved assessment (Please be as specific as possible):**

Staff divided the research recommendations from the previous assessment into categories. The SSC should discuss and provide requested model modifications appropriate for an operational assessment.

- Research Recommendations:
  - Develop methods to characterize length and age composition of gag grouper observed on videos from SERFS fishery independent surveys. Trap sampling of gag was limited and potentially biased due to size selectivity of the gear.
  - Implement systematic age sampling for the general recreational and commercial sectors. Age samples were important for this assessment for identifying strong year classes, but sample sizes were limited, particularly for the general recreational sector, which accounts for the majority of the recent landings.
  - Better characterize population and fishery dynamics of gag during their residency in estuaries. Gag spend their first year of life in estuaries, and differences in natural mortality, growth, or harvest between the estuarine phase and the offshore stock could induce biases in the assessment.
- Operational Assessment
  - Better characterize the reproductive dynamics of gag including sex ratio, maturity schedule, batch fecundity, spawning seasonality, and spawning frequency, as well as the potential for sperm limitation. Mature male and female biomass was the measure of reproductive potential for this assessment, but may be biased if reproductive parameters vary significantly with size and age, or if sex ratio and other life history characteristics have varied considerably over time.
  - Age-dependent natural mortality was estimated by indirect methods (Lorenzen) for this assessment. Telemetry- and conventional-tagging programs can provide alternative estimates of natural mortality.
- Potential Topical Working Group:
  - Investigate potential sources of recent recruitment declines in gag in the South Atlantic. Gag recruitment has been low over the last 10 years, possibly due to overharvest or external environmental factors. Non-traditional datasets, such as

inshore estuarine surveys and larval bridge net surveys, may be helpful in better understanding recruitment dynamics of gag.

**Is a Topical Working Group Needed?** Yes or No

**If Yes, Topical Working Group Topics:**

- Topic 1:
- Topic 2:

**Suggested Topical Working Group Process:**

*Is an in-person workshop requested for the Topical Working Group, or can it meet via webinar.*

**POTENTIAL SCHEDULE:**

- Cooperators use their process to develop SoWs
- SSC reviews SoWs at April meeting, then SAFMC reviews in September, 2022
- Initial Cooperator-approved SoWs submitted to SEFSC by November 1, 2022
- SEFSC provides feedback to Cooperators via memo no later than February 1, 2023
- Cooperators/Technical review bodies review feedback and negotiate final SoWs with SEFSC
- Final SoWs provided to SEDAR Program Manager by May 1, 2023
- Assessment Species are approved at Spring SEDAR Steering Committee Meeting, May 2023.
- Terms of Reference to SSC in October, 2023 and SAFMC in March, 2024
- Data scoping workshop meet 2025
- Topical working groups (if necessary) meet 2025
- Assessment reviewed by SSC and SAFMC in late 2025/early 2026