12.GRAY TRIGGERFISH ASSESSMENT REVIEW

12.1. Documents

Attachment 14. SEDAR 41 SAR, Gray Triggerfish

12.2. Presentation

Assessment Overview: Dr. Luiz Barbieri, FL FWC

12.3. Overview

The Committee is asked to review the Gray Triggerfish assessment prepared through SEDAR 41. This is the first assessment prepared of this stock, so there are no existing recommendations to consider. The Review Workshop was held in April 2016.

An ABC recommendation of 672,565 pounds, provided in April 2011, was based on the third highest landings observed from 1999 to 2008. This was the Committee's default rule for fisheries that did not show any concerning trends in landings. However, the Committee did note that the stock may be recovering from an excessive peak in landings. Given the impending assessment, the SSC felt the risk to the resource was minimal.

12.4. Action

- Review assessment
  - Does the assessment address the ToRs to the SSCs satisfaction?
  - Does the assessment represent Best Scientific Information Available?
  - Does the assessment provide an adequate basis for determining stock status and supporting fishing level recommendations?
- Identify and discuss assessment uncertainties
  - Are key uncertainties identified, and if not, indicate additional uncertainties.
  - Are risks and consequences of uncertainties identified and evaluated?
  - Are methods of addressing uncertainty consistent with SSC expectations?
  - List and comment on the effects of those uncertainties that most contribute to risk and impact status determinations and future yield predictions.
- Provide fishing level recommendations
  - Apply the ABC control rule and complete the fishing level recommendations table.
- Provide advice on monitoring the stock until the next assessment
  - What indicators/metrics should the council monitor/SSC evaluate to keep tabs on the stock until the next assessment?
  - Is there a recommended trigger level for these metrics?
- Provide research recommendations and guidance on the next assessment

- Review the included research recommendations, and indicate those which are most likely to reduce risk and uncertainty in the next assessment.
- Provide any additional research recommendations the SSC believes will improve future stock assessments.
- Provide guidance on the next assessment, addressing its timing and type.

SSC RECOMMENDATIONS:

The SSC received a brief presentation from Dr. Barbieri (Chair of the SEDAR 41 Review Panel) summarizing the main points and concerns identified during the Review Workshop. The Gray Triggerfish stock assessment was not accepted by the Review Panel.

The Review Panel had concerns relative to the base model results and model diagnostics, especially relative to overfitting of the CVID survey, uncertainty in age determination (including the maximum age estimate), and the natural mortality estimates.

Furthermore, an error with the Chevron Trap survey age composition data used in the base configuration of the Beaufort Assessment Model was discovered during the review workshop (the age compositions used at the Assessment Workshop were based on the number of annuli in the spines but were assumed to be calendar-year age. Corrected age composition data were provided during the workshop). The magnitude of changes to the data, and the results and model diagnostics emanating from the age corrections further exacerbated the Review Panel's concerns with model fit and model performance. Moreover, the Review Panel believed that the proposed base model parameterization was inappropriate to provide information on Gray Triggerfish stock status or benchmarks, and further felt that the magnitude of work necessary to resolve the fit, performance and data issues exceeded what could reasonably be accomplished during the review phase.

The SSC concurred with the SEDAR 41Review Panel recommendation that further modeling is needed to better fit the (corrected) age data and to resolve the fit to the CVID survey (perhaps investigating a multispecies year effect in 1990) as well as to consider possible effects from Hurricane Hugo.

- Does the assessment address the ToRs to the SSCs satisfaction?
- Does the assessment represent Best Scientific Information Available?
- Does the assessment provide an adequate basis for determining stock status and supporting fishing level recommendations?

The SSC concluded that the current assessment does not represent the BSIA and concurs with the SEDAR 41 Review Panel in rejecting the assessment.

- Identify and discuss assessment uncertainties
  - Are key uncertainties identified, and if not, indicate additional uncertainties.
  - Are risks and consequences of uncertainties identified and evaluated?

- Are methods of addressing uncertainty consistent with SSC expectations?
- List and comment on the effects of those uncertainties that most contribute to risk and impact status determinations and future yield predictions.

This assessment had many uncertainties and was not accepted as representing the Best Scientific Information Available.

- Provide fishing level recommendations
  - Apply the ABC control rule and complete the fishing level recommendations table.

Since the quantitative stock assessment model developed during SEDAR 41 was not accepted, the SSC discussed the potential for providing fishing level recommendations based on lower tiers of the ABC control rule. Accordingly, the Committee considered the possibility of using the DCAC method. However, based on concerns regarding the uncertainties with Gray Triggerfish age determination and its impact on estimates of natural mortality, the SSC decided to not go forward with this approach.

Without an accepted stock assessment or any other basis for providing updated fishing level recommendations, the SSC recommended that the current (i.e., status quo) ABC for Gray Triggerfish be maintained on an interim basis until an analytical assessment can be developed or there is evidence that the stock is not performing as anticipated.

- Provide advice on monitoring the stock until the next assessment
  - What indicators/metrics should the council monitor/SSC evaluate to keep tabs on the stock until the next assessment?

The SSC recommends that indicators to monitor the stock include fisheries landings and discards, as well as the SERFS fishery independent index.

  - Is there a recommended trigger level for these metrics?

The SSC recommends the use of sustained depletion in surveys, increased regulatory discards, landings that meet or exceed the ACL.

- Provide research recommendations and guidance on the next assessment
  - Review the included research recommendations, and indicate those which are most likely to reduce risk and uncertainty in the next assessment.
  - Provide any additional research recommendations the SSC believes will improve future stock assessments.
  - Provide guidance on the next assessment, addressing its timing and type.

With the importance of the SERFS video index in providing fishery-independent information, the SSC recommends that techniques be developed to determine the length composition in the video survey. Currently, the length and age composition data (and the resulting selectivity for the combined video and trap index) are based only on trap survey data.

The Committee had an extended discussion regarding resolution of long-standing issues relative to the age determination for Gray Triggerfish and its impact on estimation of natural mortality. Gray Triggerfish age is determined based on spine structures. As indicated in the documents from the age workshops, there is a high degree of variability in the interpretation of these structures. Furthermore, as no validation of these structures is currently available, the relationships between these observed age structures and true fish ages are unknown. An ongoing 3-year age validation study should be completed soon but the results will likely not be available until 2018. Depending on the study results, it is possible that all the Gray Triggerfish spines may need to be re-aged. This could take a minimum of 6 months to one year. This means that the earliest a Data Workshop could be scheduled would be late 2019.