

**SEDAR 62 Assessment Webinar I**  
**Gulf of Mexico Gray Triggerfish**  
**June 20, 2019 from 10:00 AM to 11:00 AM**  
**Summary Report**

The terms of reference for the assessment were reviewed. During the Data Workshop, it was determined that the spine-based age data were inaccurate. To compensate, the age composition data were replaced with the length composition data to develop a length-based model. Also, an otolith-based growth curve is being developed to inform the model about the relationship between lengths and ages. The commercial longline fleet was developed as a separate index from the rest of the commercial vertical line data to provide asymptotic selectivity. The SEAMAP groundfish trawl survey was split between the eastern and western Gulf of Mexico post-2007. The circle hook effect for release mortality and catchability was removed, since this effect was not observed to be significant for gray triggerfish. Discard mortality was set at 25% based on recent research.

The current model structure includes six fleets: commercial east; commercial west; recreational east; recreational west; commercial bottom longline; and shrimp. Modeled indices of abundance include: MRFSS, Headboat east, Headboat west, SEAMAP Larval Survey, SEAMAP Trawl (1987-2007), SEAMAP Trawl East (2008-2017), SEAMAP Trawl West (2008-2017), and the Combined Video Survey.

The model begins in 1945, with one area and one fishing year. Sexes are combined for growth, and the maximum age is set at 10 years. Length bins are set in 2cm increments up to 74cm. Shrimp discards are “super-yearred” from 1945-1971 and 1971-2017. The regulatory environment was reviewed, with time blocks established for the affected fleets where applicable. Lorenzen natural mortality and a von Bertalanffy growth curve are used, with first age at maturity set at age-2.  $R_0$  is estimated, steepness is fixed at 0.45,  $\Sigma R$  is fixed at 0.6, the initial fishing mortality rate is fixed at 0, and discard mortality is fixed at 25% for all fleets.

How indices are modeled internally was reviewed. Input variances are adjusted as specified by model output, and length sample sizes are reweighted using the Francis method. Surveys were up-weighted to 1.5 times their original weight, with the exception of the western headboat index, since the majority of the biomass occurs in the eastern Gulf.

The majority of fishing effort occurs in the recreational sector in the eastern Gulf. Fits to length composition data are fairly good, and will continue to be fine-tuned as the growth curve is developed. Fleet-specific selectivity curves were reviewed, and were commensurate with observations.

The status of aging efforts by the University of Florida to rectify the previously mentioned aging issues was presented. Poor agreement was observed at the Data Workshop between ages from spines and from otoliths. Radiocarbon age validation showed that the null model demonstrated the lowest residual sum of squares value, and that the otolith ages were accurate. Over the past few weeks, 80 otoliths have been scanned with a nano-CT scanner, with validation using light microscopy. Bomb radiocarbon validation has shown the light microscopy method to

demonstrate lower average percent error than the CT scan method. The aging team will strive to complete over 200 ages, with the data to be delivered to the analytical team by the end of July. A cursory examination of sex-specific size at age showed that males are typically larger at age than females. A comparison of the resultant sex-specific growth functions from using otoliths versus spines for aging showed considerable differences in estimated age between hard parts, especially for males.

To test model fits, aging data from the South Atlantic will be temporarily input into the model to test the model's performance until the expected Gulf aging data are received at the end of July.

Discussions of the decline of effort for gray triggerfish in the Headboat indices focused on reasons behind the observed declines. Effort in the western Gulf drops to near-zero levels post-2008, and to comparatively lower levels in the eastern Gulf for the same time period. Stakeholders have in the past remarked about avoiding triggerfish because they can pick the natural bait off circle hooks, and this avoidance behavior may explain the decrease in headboat effort post-2008. Nearshore recreational effort may explain some of the decrease in effort, as access to fish closer to shore is possible for more anglers. Further, the increase in the number of half-day for-hire trips (~6 hours or less) may be limiting those vessels to waters closer to shore, resulting in fishing site competition with private anglers and reducing overall CPUE for the headboat vessels. Panelists will reach out to headboat vessel captains to try and discern whether the signal in the headboat indices is valid. In the interim, the post-2008 time period will be removed from the headboat indices.

Assessment Webinar II will be held the week of July 17, 2019 at 2:00 PM eastern time. Assessment Webinar III will be held the week of August 12, 2019 Assessment Webinar IV will be held the week of September 2, 2019
--

**Participants:**

Julie Neer  
Ryan Rindone  
Robert Allman  
Derek Chamberlain  
Ching-Ping Chih  
Nancie Cummings  
Kelly Fitzpatrick  
Chris Gardner  
Martha Guyas  
Scott Hickman

Kai Lorenzen  
Dominique Lazarre  
Bud Miller  
Peter Mudrak  
Ashley Pacicco  
Will Patterson  
Ted Switzer  
Kevin Thompson  
Jim Tolan  
David Walker

Beth Wrege  
Glenn Zapfe  
David Hanisko  
Michelle Masi  
John Walter  
Michael Drexler  
Jeff Isely  
Adam Pollack