

SEDAR 52 Assessment Webinar I
Gulf of Mexico Red Snapper
February 8, 2018 from 1:00 PM to 3:00 PM
Summary Report

Changes to data, the results of the continuity model, and the base model run proposal were covered during this webinar. Many delays have occurred due to data not being delivered on schedule.

Data Issues

Outstanding data issues remain in many areas. Analysts are still exploring whether to include an unusually large amount of shrimp bycatch from 2016, but don't think its effect on the model will be significant due to the use of the super-year approach for fixing shrimp bycatch mortality. SEDAR best practices will be used to integrate headboat discards, and landings-corrected discards will be used for the commercial sector. Recreational discard mortality rates will be updated post-2008 to 11.8%, with a sensitivity at 15.2%. The MRIP and headboat-East indices will be truncated at 2013 for both the continuity and base models to account for changes in management.

Commercial discard data differ noticeably between the 2014 update assessment for red snapper, and the SEDAR 52 continuity run, due to the use of landings-corrected discards for both the handline and longline fleets. The story is similar for headboat discards, which show decreases in discard mortality in recent years between assessments. MRFSS data are largely similar between the update assessment and the continuity run, except for the most recent years; however, this index will be truncated at 2013 to account for management changes.

Data collected as part of the NMFS bottom longline survey have changed over time. The base model will be truncated to 2001-2016, and only NMFS survey data will be used in the eastern Gulf. Dauphin Island Sea Lab (DISL) data will be excluded, as they aren't representative of the eastern Gulf. Panelists were concerned that excluding the DISL data would exclude data associated with artificial reefs- a significant point of public criticism in past assessments.

NMFS bottom longline data from the western Gulf are similar across the update, continuity, and base runs, but the base model data for the western Gulf is much lower than the other indices for the eastern Gulf. It was queried that the data from the eastern Gulf may not be the correct data; analysts determined a plotting issue was to blame, and presented the correct plot, which showed a marked increase in bottom longline landings in the eastern Gulf for 2014-2016. NMFS data appear to be selecting for a wider distribution of size classes, whereas the DISL survey is landing a higher frequency of larger fish, on average. Panelists ultimately decided to include the DISL bottom longline data, since it was used in previous assessments.

SEAMAP trawl surveys only cover statistical grids 10 and 11 with any consistency; therefore, the continuity model will only include data from those areas. An option for the base model may

be to split the index to include survey data from statistical areas 1-9 for 2009-2016, minus data from the fall sampling run, which are sparse.

Continuity Model Run

The continuity model is an age-structured east/west model, and includes data generally from 1872 – 2016. Time-varying parameters are recruitment, selectivity, retention, and discard mortality. Shrimp discards are treated as a super-year to fix bycatch at the median value across all years. Recreational discard mortality was increased from 10% to 11.8%. SEDAR best practices were used to integrate headboat discards, and landings-corrected discards were used for the commercial sector. The MRIP and headboat-East indices were truncated at 2013 to account for changes in management. Index standard errors were scaled to a common mean of 0.2, and effective sample sizes were reweighted to better fit age composition data.

Four directed fleets were incorporated for both landings and discards: commercial handline and longline, MRFSS/MRIP, and Headboat, all for the east and west. Bycatch was incorporated for the commercial and recreational closed seasons, and for the shrimp fleet. Eight fishery-dependent indices of abundance were used: commercial handline, MRFSS/MRIP, Headboat, and Shrimp, all with eastern and western Gulf components. Ten fishery-dependent indices of abundance were used: SEAMAP video, plankton, and summer and fall groundfish surveys; and the NMFS bottom longline survey; all with eastern and western Gulf components.

Initial continuity model results indicate that as of the end of 2016, red snapper stocks in the Gulf continue to grow from their all-time lows in the 1980s and 1990s. The western Gulf appears to continue to hold the majority of the red snapper in the Gulf. Recruitment remains highly variable year-to-year, with what appears to be a generally increasing trend in recruitment in recent years. Fishing mortality has decreased substantially since 2008, with something of an increase in the last two years of data (2015-2016). Fits to age composition data are good, except for the eastern NMFS bottom longline data. Fits to fishery-dependent indices generally follow observed trends in the data, even if predicted fits do not exactly match observed data. Fits to fishery-independent indices and discard data also generally follow observed trends. One caveat with the discard fits is the headboat discards, which the model appears to be overestimating.

Several model runs were attempted, with varying degrees of reweighting and scaling of old and new discard data. Model runs performed similarly in terms of available biomass over the time series, especially in the western Gulf.

Base Model Run

The base model will also be age structured, and will feature several modifications. Recreational discard mortality will increase to 11.8%. SEDAR best practices will be used to integrate headboat discards, and landings-corrected discards will be used for the commercial sector. The MRIP and headboat-East indices are truncated at 2013 to account for changes in management. New site selection is used for larval indices, and the NMFS bottom longline index will include DISL data. Time permitting, shrimp and SEAMAP age composition data will be improved. The Connectivity Modeling System (CMS) data may be included pending a sensitivity run. All

stock-recruitment parameters will be estimated, along with bias adjustments and recruitment deviations for years with corresponding age composition data. Index standard errors will be scaled to a common mean of 0.2, and effective sample sizes will be reweighted to better fit age composition data. Lastly, forecasting will feature updated fixed bycatch levels to account for new estimates.

Several sensitivity runs have been proposed. Recreational discard mortality will be increased to 15.8%. The SEAMAP vertical line survey will be incorporated if raw length composition data can be found. All fishery-dependent indices will be removed to test model sensitivity. The CMS model will be used as a recruitment deviation index. Analysts stressed that time was a factor, and that not all sensitivities may be able to be performed prior to the due date for the assessment to be delivered to the Gulf Council's SSC on April 27th.

Assessment Webinar 2 will be held on March 6, 2018
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Participants:

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Clay Porch	Sean Powers	Adam Pollack	Mike Larkin
Skyler Sagarese	Shannon Calay	Jeff Isely	Leann Bosarge
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