A joint meeting of the Standing, Ecosystem, and Special Reef Fish SSC was held during June 3-5, 2014 in Miami.

SEDAR 33 Greater Amberjack Benchmark Assessment

Prior to presenting the current greater amberjack Stock Synthesis based assessment, Shannon Cass-Calay presented an assessment based on ASPIC, which was the assessment model used in SEDAR 9. Three models were run, a continuity ASPIC Model for consistency with the prior assessments, a "high" ASPIC model where recreational discard weights were associated with bag limits, and a "low" ASPIC model where recreational discard weights were associated with size limits. For the continuity model, the resulting B/B_{MSY} ratio = 1.14, and the F/F_{MSY} ratio = 0.55. A series of sensitivity runs were also conducted to evaluate the model's sensitivity to discard mortality, index weighting, and initial B1/K ratio. The ASPIC model was not used for management for the SEDAR 33 assessment. These runs were conducted for comparison only.

Nancie Cummings presented the greater amberjack benchmark assessment computed using the Stock Synthesis statistical catch-at-age model. The SEDAR Review Panel had several concerns with the initial assessment. The Review Panel's main concern was with the jitter analysis, which is used to verify model convergence. After 50 runs large changes were evident in several key outputs when the starting point was changed. For Gulf of Mexico greater amberjack it was the view of the Panel that the optimal configuration of Stock Synthesis had not yet been found. The Panel offered several suggestions to further develop the model. The model presented to the SSC included an addendum that addressed the concerns brought up by the Review Panel. Fishery-dependent and independent inputs were similar to those used for the greater amberjack ASPIC model.

Greater amberjack do not change sex. In the Gulf of Mexico, female greater amberjack attain 50% maturity between 820-830 mm FL (~32-33 inches FL) and 3 years of age. Both size and age at 50% female maturity are larger in the Gulf than in the South Atlantic, where greater amberjack are estimated to reach 50% maturity between 719 and 745 mm FL (27-29 inches) and 1.3 years of age.

To address concerns expressed by the SEDAR Review Workshop, a series of jitter routines were run to evaluate the model's stability and convergence. The model was found to be stable except for one outlier. Additional sensitivity runs suggested by the Review Panel were also run. Sensitivity runs considered natural mortality rates of M=0.15 y^{-1} and M=0.35 y^{-1}, release mortality rates of 10% and 15%, and spawner-recruit steepness values of 0.75, 0.8, 0.85, 0.9, and 0.95). With the exception of the high M sensitivity run, the base model and all sensitivity runs found the greater amberjack stock to be overfished and undergoing overfishing.

After reviewing the Stock Synthesis assessment for greater amberjack and additional analysis, the SSC passed the following motions.

By a vote of 20 to 0, the SSC considers the post review workshop addendum to the Greater amberjack SEDAR 33 stock assessment as the best available science and suitable to use for management.

By a vote of 18 to 0, the SSC accepts the proposed base model from the addendum to SEDAR 33 as the base model for management advice for Greater amberjack. Benchmarks are based on a fixed steepness of 0.85 and an F_{MSY} proxy of $F_{30\%SPR}$.

Table 1 of the greater amberjack assessment addendum 2 indicates that, with the SSC's selected model of steepness = 0.85, combined (female plus male) SSB, and F_{MSY} proxy of $F_{30\% SPR}$, the ratio of $SSB_{CURRENT}/SSB_{30\% SPR} = 0.471$, and the ratio of $SSB_{CURRENT}/SSB_{MSST} = 0.654$ (current year = 2012). Because the biomass ratio for both the B_{MSY} proxy and MSST is below 1.0, the greater amberjack stock remains overfished.

Table 1 of the greater amberjack assessment addendum 2 indicates that, with a steepness = 0.85 and combined (female plus male) SSB, the value for $F_{30\% SPR} = 0.222$ (also equal to the maximum fishing mortality threshold, MFMT). The value for $F_{CURRENT}$ (measured as the geometric mean of 2010-2012) = 0.256. Therefore, the ratio of $F_{CURRENT}/F_{30\% SPR} = 1.151$. Because the fishing mortality rate ratio is above 1.0, the current fishing mortality rate is above MFMT, and the greater amberjack stock is undergoing overfishing.
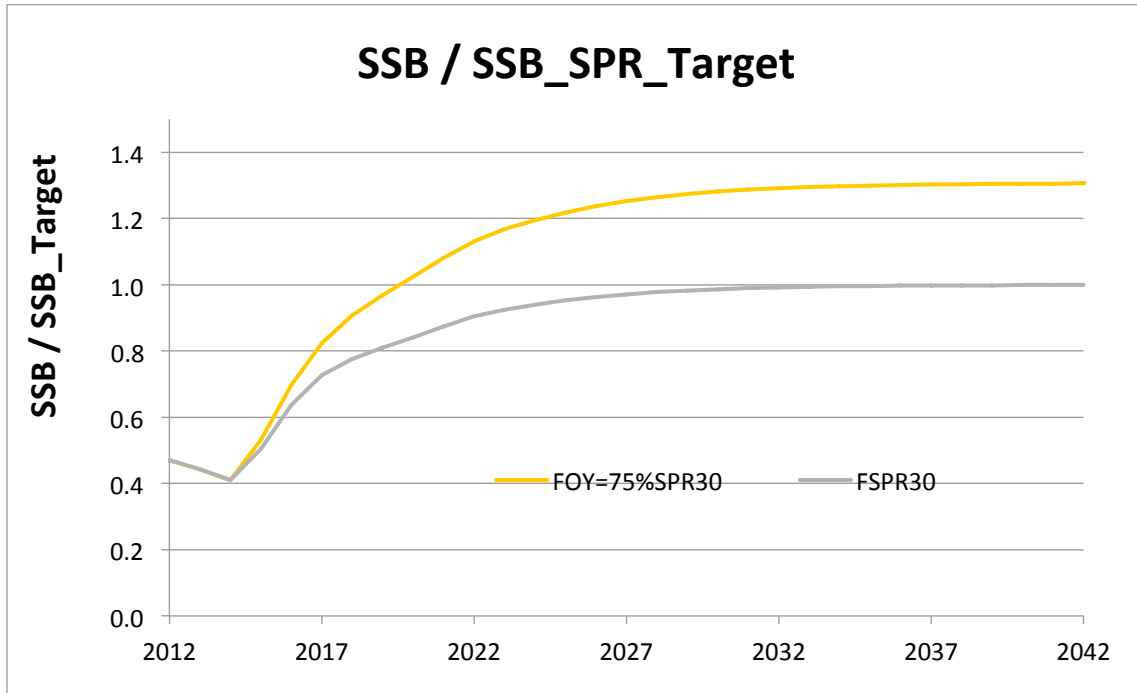
Steven Atran noted that the final year of the greater amberjack rebuilding plan was 2012. The NS1 guidelines state that when a stock has exceeded its maximum rebuilding time and is not yet rebuilt, the yield should be set at the yield corresponding to $F_{REBUILD}$ or to 75% of MFMT, whichever is less. Mr. Atran suggested that $F_{REBUILD}$ cannot be calculated without a target date. Therefore, ABC should be set to 75% of MFMT. Following this advice, the SSC passed the following motion for OFL and ABC. Yields are in terms of retained catch.

By a vote of 18-0, the SSC recommends the following yield streams in millions of lbs. for OFL (yield at $F_{30\%SPR}$) and ABC (yield at 75% of $F_{30\%SPR}$) of Greater amberjack for the period 2015-2018

Year	Yield at $F_{30\% SPR}$ OFL	Yield at 75% of $F_{30\% SPR}$ ABC
2015	2.14	1.72
2016	2.69	2.23
2017	2.91	2.49
2018	2.99	2.62

It is the intent of the SSC that the 2018 ABC be continued in future years until a new stock assessment is conducted.

The above ABC yield stream is projected to rebuild the greater amberjack stock to $SSB_{30\% SPR}$ by 2020 (Figure 1). However, this assumes that the 2014 yield is also reduced to 1.18 mp. The SSC did not change the ABC for 2014 because they felt it was too late in the year to effect a change. Consequently, while the above ABC stream will rebuild the stock, it may take slightly longer than projected to reach $SSB_{30\% SPR}$.

Figure 1. Greater amberjack projected time to recovery (SSB/SSB_target = 1.0) under a model scenario of combined (female plus male) SSB, $F_{30\% SPR}$ proxy for F_{MSY}, and a spawner-recruit steepness of 0.85, assuming yield adjustments begin in 2014. At the OFL ($F_{30\% SPR}$) yield stream, recovery is projected to occur in 2034. At the ABC (75% of $F_{30\% SPR}$), recovery is projected to occur in 2020.