

## **MSY Proxies Working Group GoToMeeting Summary – July 12, 2018**

*Group members present: Steven Atran, John Froeschke, Carrie Simmons, Dan Goethel, John Walter, Clay Porch, Peter Hood, Mara Levy.*

The MSY Proxies Working Group met by GoToMeeting on Thursday, July 12. This group consisted of a sub-set of the Reef Fish Amendment 48/Red Drum Amendment 5 IPT plus additional staff from the SEFSC. The purpose of this meeting was to revise Action 1 (MSY proxies) to reflect the concerns expressed by the SSC.

### *Assessed Stocks*

For assessed stocks, the group agreed that it was not the actual value for MSY proxy, but rather the formula, or metric, used to define the proxy, e.g., the yield at  $F_{30\% SPR}$ .

For stocks where an MSY proxy has already been adopted in a plan amendment (gag, red grouper, red snapper, vermilion snapper, gray triggerfish, greater amberjack, and hogfish), there is no need to re-adopt those proxies in this action.

For assessed stocks where the SSC used an MSY proxy to determine stock status but the MSY proxy has not yet been adopted in a plan amendment, this section includes an alternative to adopt the MSY proxy used by the SSC (black grouper, yellowedge grouper, mutton snapper, yellowtail snapper, and tilefish). Gray snapper, which was just recently assessed, will not be included in this group because the Council has asked the SSC to evaluate a range of alternative MSY proxies. The MSY proxy for gray snapper will be adopted in a subsequent plan amendment.

A new alternative will be added to this action that is based on the alternative adopted by the SAFMC in their Snapper-Grouper Amendment 24. This alternative would allow the SSC to recommend a proxy, which would then be adopted by the Council by a note in a plan amendment rather than an action with alternatives. Alternatives are not needed because any alternative other than the SSC's recommendation would not be based on BSIA. This alternative could be adopted in combination with the one described above.

The group discussed the possibility of defining a range of proxies. It was suggested that a lower bound could be defined using methods described in Goethel et al (2017). A proxy of  $F_{MAX}$  would likely be close to this lower bound. An upper bound could be defined based on methods described in Harford et. Al (2018).

### *Unassessed Stocks*

The NS1 guidelines state that status determination criteria (SDC) should be measurable and objective. SDC include MFMT and MSST. The MSY proxy is not strictly an SDC. But it is used to calculate the SDC. Much of the discussion centered around whether to use an MSY proxy based on the yield at  $F_{X\% SPR}$ , which is not measurable for data limited stocks but could serve as a placeholder, or a value based on mean landings plus 2 standard deviations, which is measurable but may not be as scientifically defensible. It was suggested that, while the value for the yield at  $F_{X\% SPR}$  may not be measurable, the determination of whether overfishing is occurring might be measurable.

If the yield at  $F_{X\% SPR}$  is used as a proxy for unassessed stocks, the SEFSC might be able to recommend an appropriate  $F_{\% SPR}$  from a meta-analysis of assessed stocks with similar life histories. Another possibility might be to use methods developed by ICES for data limited stocks ([https://github.com/ices-tools-dev/ICES\\_MS\\_Y](https://github.com/ices-tools-dev/ICES_MS_Y)).

A measurable proxy could be the mean catch plus 2 (or other number) standard deviations, which was the method used to determine OFL for data-limited stocks in the Generic ACL/AM Amendment (ABC control rule, tier 3a). Group members questioned how accurate this method is. To evaluate that question, John Froeschke and John Walter agreed to use apply this method to some recently assessed stocks so that the MSY values could be compared between the data-limited method and the assessment method of yield at  $F_{X\% SPR}$ .

Goliath grouper and red drum are special cases. Harvest of goliath grouper has been prohibited Gulf-wide since 1990, and harvest of red drum has been prohibited in the EEZ since 1988. Therefore, the data-limited method, which requires a catch history, is not useable. For goliath grouper, the group discussed setting the MSY proxy equal to zero until a better proxy could be determined. However, there is obviously some sustainable yield, we just don't know what it is. Another suggestion was to set the MSY proxy at the yield at  $F_{50\% SPR}$ , which is equivalent to the intent of the 1999 Generic SFA Amendment to set the proxy at 50% SPR. For red drum, a suggestion was to set the MSY proxy at zero only in the EEZ, similar to the ABC for red drum. However, this might not be allowed under the NS3 guidelines that require a stock to be managed as a unit throughout its range. Another possibility is to set the MSY proxy at the yield corresponding to a 30% escapement as a proxy for MSY, which is the state management objective for red drum. Goliath grouper and red drum will be separated out into separate sub-actions in the amendment with their own set of alternatives.

### *Stock Complexes*

The group discussed using an assessed stock as an indicator species for stock complexes that have at least one assessed stock. This would be the preferred way to deal with stock complexes. Three of the stock complexes in the amendment have at least one assessed species, and two complexes have no assessed species. For the jacks complex (lesser amberjack, Almaco jack, and banded rudderfish), the group discussed adding greater amberjack to the group to use as an indicator species. However, the distribution of greater amberjack catches is different from the pother jacks, making it unsuitable as an indicator species. The group had no recommendations for an indicator species for the mid-water snappers complex.

### REFERENCES

Goethel, D.R., M.W. Smith, S.L. Cass-Calay, and C.E. Porch. 2017. Establishing stock status determination criteria for fisheries with high discards and uncertain recruitment. *North American Journal of Fisheries Management* 38:120–139.

Harford, W.J., S.R. Sagarese, and M. Karnauskas. 2018 [in press]. Rebuilding grouper-snapper fisheries and achieving optimum yield when stock-recruitment steepness is uncertain. Final report May 26, 2018. 37 p.