

Gulf Council Standing SSC Projections Guidelines

Projection Settings Summary

The goal of this document is to consistently review and consider decision points that the Gulf SSC has made for completed stock assessments. It should be used as a check list for areas that the SSC has generally focused on when determining yield stream projection settings. It is helpful to understand decisions on past stock assessments that have been considered consistent with BSIA by the SSC. We aim to improve consistency and specify best practices when recommending status determination criteria and OFL and ABC yield stream projections for management advice.

Long term benchmarks versus short term catch advice – Management advice is produced using both long term (100 year) benchmark projections to produce reference point targets (F_{MSY} , F_{OFL} , F_{ABC} , MSY , SSB_{MSY}), and short term (~5 year) catch advice projections to produce (OFL, ABC, and/or Rebuilding) catch yield streams.

Status Determination Criteria – SSC recommendations on how spawning stock biomass and recruitment are represented can directly influence whether a stock is estimated to be overfished and/or undergoing overfishing. For example, spawning stock biomass has been calculated as both physical biomass in metric tons, and in millions of eggs per recruit. Also, recruitment as it is used to inform stock status can be represented as the long-term average, an average based on a specific reference period, or a short near-term average (see **Recruitment** below). The degree to which modifications to these settings can influence stock status should be considered such that the most representative state of nature is put forward for determining future yields, regardless of overfished condition. The SSC should carefully document the rationale for recommending different settings for terminal year model estimates versus projections to ensure that decisions are made consistent with the best scientific information available.

MSY vs. Proxy? Most stock assessments do not produce a precise estimate of steepness, which precludes confidence in direct MSY estimation. Current proxies are typically set at $F_{30\%SPR}$ for reef fish and other species, and $F_{40\%SPR}$ for hermaphroditic groupers (e.g., change sex from female to male). The SSC should discuss and document its confidence in the ability for assessments to estimate MSY, or whether use of a proxy is more appropriate for each species given the uncertainty in steepness estimation (e.g., likelihood profiling of steepness, how spawning stock biomass is estimated, treatment of recruitment deviations).

Recruitment – Typically use the stock-recruit curve for long term average response. In short term (3-5 years) projections, average recent recruitments (3-10+ years back from terminal model year) have been used in cases where there is evidence for consistent changes in average recruitment, regime shift or an overall change in stock productivity. If the SSC suspects a positive or negative “regime shift,” they should discuss and document any evidence of the productivity change regardless of trend. Recruitment settings for OFL have recently used long-term average recruitment estimates (10-20+ years) for projections. For ABC, the SSC has generally used the average recent recruitment.

Selectivity – Typically use average fleet-specific selectivity settings for the past three years if no regulation change has occurred, and if regulations have changed, use years where new management is in place for selectivity.

Allocation – Generally have used current sector allocations for short term projections. If the Council is considering a range of new allocations, the SSC may be asked to consider projections for proposed or recently changed allocations. Note that the model itself does not use sector allocations- these are only used in the projections.

Preliminary landings – The Council discourages use of preliminary landings data in projections, and the projections have generally used finalized landings. Finalized landings can be averaged over the most recent finalized years.

Projection timelines – The SSC has generally projected model results up to five years from the beginning of the projection period. Sometimes the SSC has given OFL and ABC advice for three years instead of five, depending on the number of interim years in the projections, and/or confidence in the robustness of the model results.

Table 1. Example of equilibrium projection settings for short-term catch advice.

Parameter	Value	Comment
Relative F	Average from 2016 – 2018	Average relative fishing mortality over terminal three years (2016-2018) of model
Selectivity	Average from 2016 – 2018	Average fleet specific selectivity estimated over terminal three years (2016-2018) of model
Retention	Average from 2016 – 2018	Average fleet specific retention estimated over terminal three years (2016-2018) of model
Recruitment	Average from 2009 – 2018	Average recruitment over last 10 years
2019 Landings	156.907 mt (Commercial Vertical Line), 14.51 mt (Commercial Longline), 22.979 thousands of fish (Charter/Private), 0.99 thousands of fish (Headboat)	2019 landings
2020 and 2021 Landings	184.01 mt (Commercial Vertical Line), 11.891 mt (Commercial Longline), 66.1150 thousands of fish (Charter/Private), 1.377 thousands of fish (Headboat)	Average landings between 2016-2018
Allocation Ratio	27:73	commercial:recreational