

Gulf of Mexico Fishery Management Council
Standing and Special Reef Fish SSC
Review of SEDAR 15A Update Assessment: Mutton Snapper
Tampa, Florida
March 11-12, 2015

The meeting of the Standing and Special Reef Fish SSC was held March 11-12, 2015. The Standing and Special Reef Fish SSC did not have a quorum present. Therefore, the SSC did not vote to make OFL and ABC recommendations for mutton snapper. OFL and ABC will be reviewed at a future meeting.

FWC SEDAR 15A Mutton Snapper Update Assessment

The SSC did not have a quorum present, and therefore did not vote to recommend mutton snapper OFL and ABC. However, the SSC did review the update assessment and voted on whether to accept it. Mr. Joe O'Hop from Florida FWRI presented the assessment. The South Atlantic and Gulf of Mexico regions were treated as one for the SEDAR 15A assessment and for this update. A statistical catch-at-age model (ASAP) was used as the assessment model. Several suggestions for improvements made by the SEDAR 15A Review Panel were incorporated into this assessment. Changes in the update assessment included:

- Update incorporates
 - New discard data (rates, lengths, dispositions)
 - Revised maturity schedule, new sex ratio data (~1:1)
 - Re-calculated growth curves, M (but similar to SEDAR 15A)
 - New genetics data (still one stock)
 - Stochastic Age-Length-Key (but still external to model)
 - Fishery ALK and Direct aging as sensitivities
 - Newer methods for constructing indices of abundance
 - ALK- age comps for discards, indices of abundance
- Selectivity modeled with logistic and double logistic curves
 - And linkage of fishery dependent indices to fleets
- Adjusted 1981-1991 Head Boat Survey landings and discards
 - [SEDAR41-DW40, August 2014]
- Adjusted MRFSS/MRIP time series, by coast, year, and mode
- Base run, eighty-one sensitivity runs, 10-year retrospective, likelihood profiling, and MCMC (multiple chains)

Indices generally followed the same trends as in the previous assessment. One difference in the results of the update assessment compared to the SEDAR 15A benchmark assessment was a change in the maturity curves. The average length at 50% maturity was reduced from 402 mm (15.8 inches) TL to 388 mm (15.3 inches) total length. The age at 50% maturity was also reduced from 3.71 years to 2.72 years.

A plot of Markov Chain Monte Carlo results for SSB-ratio and F-ratio was made using $F_{30\% SPR}$ as the proxy for F_{MSY} . None of the F-ratios were above 1 (overfishing not occurring). Only

6.2% of the SSB-ratios were less than MSST ($1 - M \cdot B_{MSY}$) and only 24.3% were less than 1, indicating that the stock is not overfished (Figure 1).

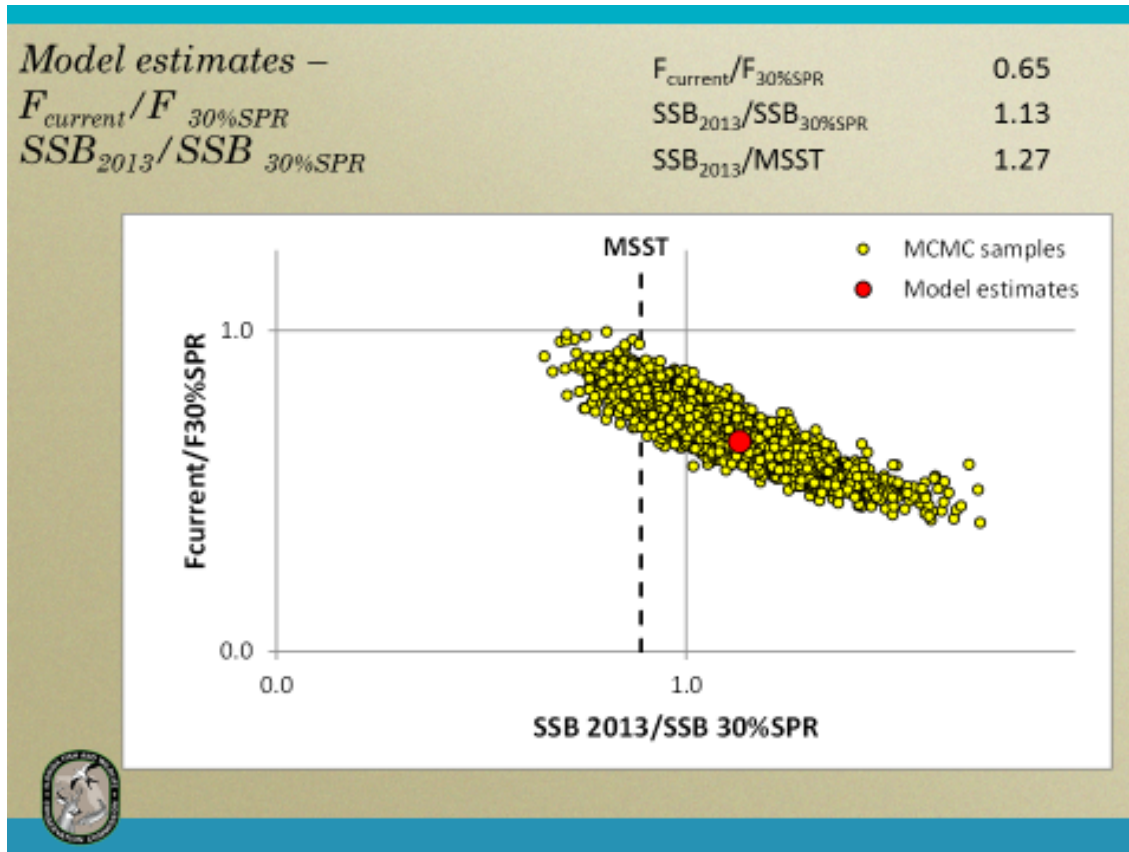


Figure 1. Plot of Markov Chain Monte Carlo results for SSB-ratio and F-ratio

Results of most of the sensitivity runs also indicated the stock was below the overfishing threshold and above MSST (Figure 2). Exceptions were runs using low natural mortality, direct ageing, no age-composition indices (age-structured surplus production model), or with only a single fishery independent index (RVC or Riley’s Hump) for model tuning.

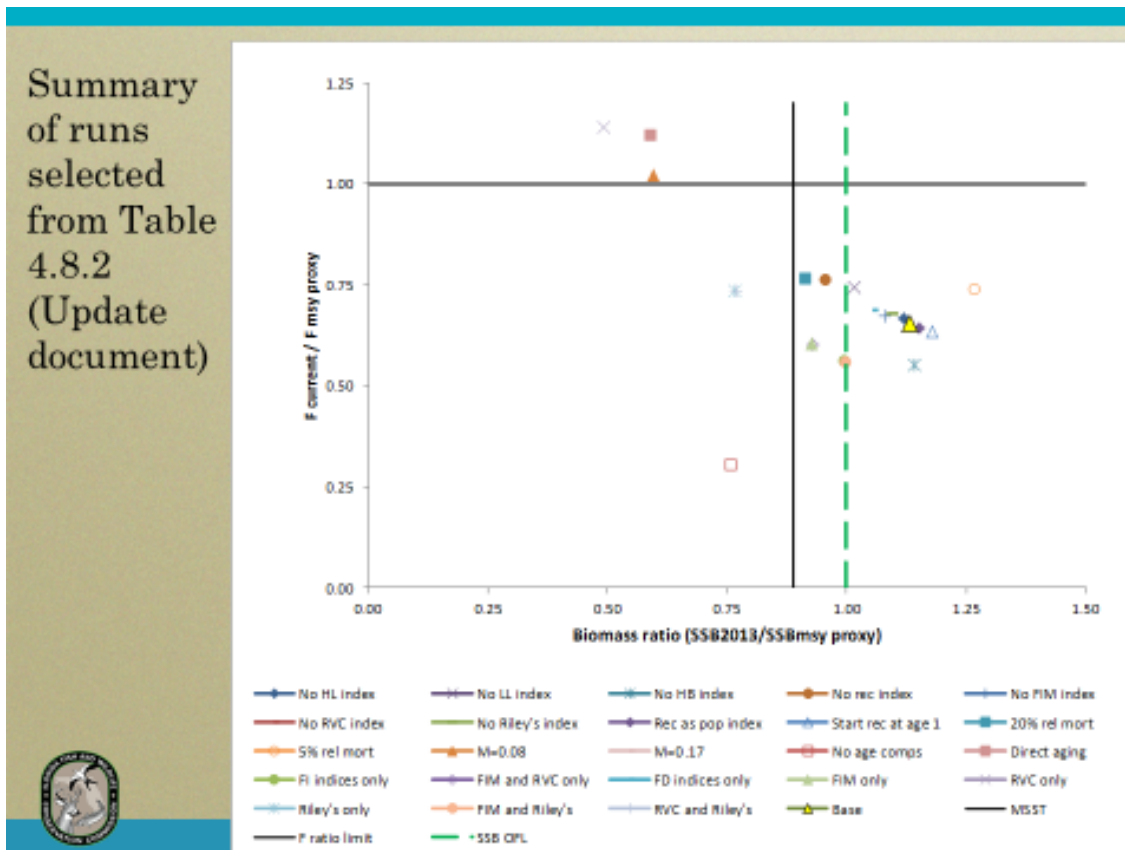


Figure 2. Summary of sensitivity runs.

Upon reviewing the update assessment, the SSC passed the following motion.

The Committee accepts that the 2015 SEDAR 15a update assessment of mutton snapper represents the best available science and is suitable for the development of management advice.

Motion passed 9-0

Since a quorum is needed to vote on ABC projections, the SSC did not review projections or recommend OFL and ABC. Furthermore, some SSC members expressed concern about fitting the model with age composition estimates derived from age-length keys when direct aging of the catch was available. The SSC requested additional information to examine that fit versus model runs in which age composition was estimated via direct aging of the catch.

Approximately 85% of the mutton snapper stock occurs in the South Atlantic Council's jurisdiction. The South Atlantic SSC is scheduled to review the mutton snapper update assessment and vote on OFL and ABC when it meets in April. When the Gulf SSC meets again in May, it will review the South Atlantic SSC's recommendations and the results of the additional information requested. At that time, the SSC will decide whether it concurs with the South Atlantic SSC's recommendations.

**Standing and Special Reef Fish SSC
New Orleans, Louisiana
May 20, 2015**

Mutton Snapper OFL and ABC

Mr. Joe O’Hop (Florida FWC) reviewed the analysis used to project OFL and ABC for the mutton snapper stock. Mutton snapper is a single stock that crosses Gulf and South Atlantic Council jurisdictions. The SSC had previously reviewed the SEDAR 15A mutton snapper update assessment, but had not made any recommendations regarding stock status or OFL/ABC because of a lack of a quorum. The SSC decided to recommend stock status before proceeding to OFL/ABC recommendations.

Although a series of sensitivity runs produced varying results, the base model (yellow triangle in Figure 8) indicated that the fishing mortality rate was below the F_{MSY} proxy of $F_{30\% SPR}$, and the spawning stock biomass was above both MSST and the SSB_{MSY} proxy of $SSB_{30\% SPR}$.

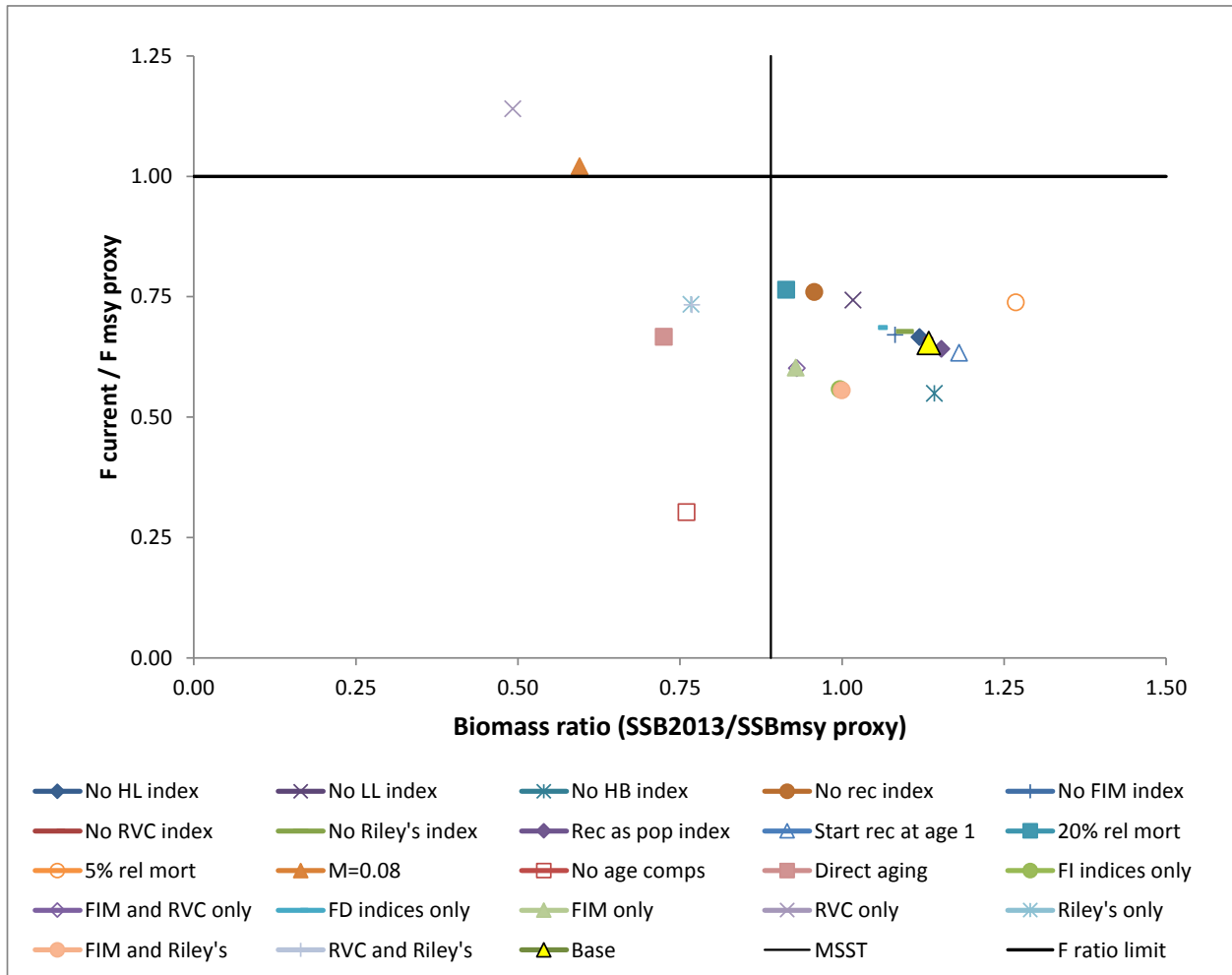


Figure 3. Summary of results of base model run and sensitivity runs of mutton snapper in SEDAR 15A update assessment.

Motion: Based on the SEDAR 15a Mutton snapper update assessment, the SSC considers the stock neither overfished nor undergoing overfishing

Motion carried by consensus

The SSC reviewed the OFL and ABC yields recommended by the South Atlantic SSC (Table 7).

Table 7. SAFMC SSC Mutton Snapper stock status and ABC recommendations.

| Criteria | Deterministic | | Probabilistic | |
|---|--|-------------|---------------|----------------|
| Overfished evaluation | Not overfished: SSB/MSST=1.12 | | | |
| Overfishing evaluation | Not overfishing: F/F _{30%SPR} =0.65 | | | |
| MFMT (F _{30%SPR}) | 0.18 | | | |
| SSB _{30%SPR} (lbs females) | 4,649,200 | | | |
| MSST (lbs females) | 4,137,700 | | | |
| Y at F _{30%SPR} (MSY proxy, lbs) | 912,500 | | | |
| Y at F _{40%SPR} (lbs) | 874,000 | | | |
| ABC Control Rule Adjustment | 20% | | | |
| P-Star | 30% | | | |
| OFL RECOMMENDATION | | | | |
| Year | Landed LBS | Discard LBS | Landed Number | Discard Number |
| 2014 | 664,876 | 30,708 | 113,300 | 17,341 |
| 2015 | 664,877 | 44,496 | 125,245 | 25,215 |
| 2016 | 713,492 | 54,005 | 148,995 | 29,298 |
| 2017 | 751,711 | 55,962 | 164,150 | 29,660 |
| 2018 | 793,823 | 56,994 | 173,656 | 30,071 |
| 2019 | 835,318 | 58,170 | 180,716 | 30,430 |
| 2020 | 850,077 | 58,857 | 184,868 | 30,780 |
| ABC RECOMMENDATION | | | | |
| Year | Landed LBS | Discard LBS | Landed Number | Discard Number |
| 2014 | 664,900 | 30,700 | 113,300 | 17,300 |
| 2015 | 664,900 | 44,800 | 125,800 | 25,400 |
| 2016 | 692,000 | 52,800 | 145,400 | 28,600 |
| 2017 | 717,200 | 53,700 | 157,500 | 28,400 |
| 2018 | 746,800 | 53,900 | 164,500 | 28,300 |
| 2019 | 774,400 | 54,400 | 169,300 | 28,300 |
| 2020 | 798,300 | 54,500 | 172,700 | 28,300 |

Motion: The SSC concurs with the OFL and ABC yield streams projected for Mutton snapper as adopted by the SAFMC SSC for the years 2016-2020

Motion carried 16 to 0