Standing and Special Reef Fish SSC
Meeting Summary - Corrected
New Orleans, Louisiana
May 20, 2015

The meeting of the Standing and Special Reef Fish SSC was held on May 20, 2015. The agenda and the minutes of the Standing and Special Reef Fish portion of the March 10-12, 2015 Standing, Special Spiny Lobster and Special Reef Fish SSC meeting were approved as written.

Luiz Barbieri agreed to be the SSC representative at the June 8-12, 2015 Council meeting in Key West.

Analysis of Alternative F_{MSY} proxies for Red Snapper

Dr. Dan Goethel presented a review of alternative F_{MSY} proxies for red snapper. Global MSY is the highest sustainable yield that could hypothetically be taken from a stock if fishing is restricted to an optimal age class using knife-edge selectivity (no harvest above or below that age class), no discard mortality, and the relationship between spawning stock biomass (SSB) and recruitment is known. Proxies for MSY are used for red snapper because the stock-recruit function is not well-defined (Figure 1). Additionally, it is impossible to implement optimal age selectivity from a management perspective, because catch cannot be constrained to a single age class, and control of bycatch and discarding is extremely difficult. Proxies are often utilized to approximate MSY or the associated SSB at MSY, and can be based on either yield-per-recruit (YPR) or spawning potential ratio (SPR) analyses. YPR aims to approximate MSY, but SPR aims at maintaining biomass within safe biological limits with no specific goal of maximizing yield.

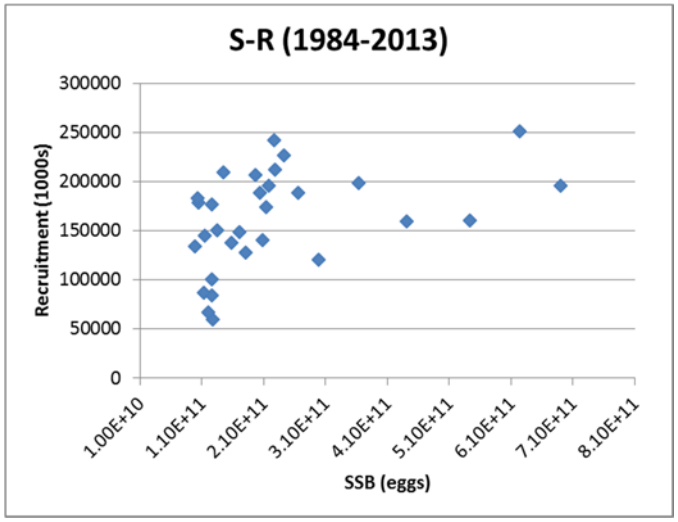

Figure 1. Red snapper spawner-recruit levels for 1984-2013. Spawning stock biomass (SSB) is in number of eggs produced. Recruitment is in abundance (1000s) of age-0 fish.

Maximum YPR (or F_{MAX}) harvest control rules maximize yield from an 'average' recruit by optimizing the time of capture (i.e., the knife-edge selectivity assumption is maintained as

assumed in MSY calculations) based on the tradeoff between growth (weight) and natural mortality. YPR analysis does not account for the relationship between spawners and recruits. Maximum YPR does not result in the MSY unless there is truly no spawner-recruit relationship. If a spawner-recruit relationship does exist, maximum YPR will usually overestimate MSY causing a lower resulting SPR[1]. Recruitment overfishing can occur when maximum YPR is used as a management target if the stock is unable to replace itself (i.e., yield exceeds growth).

Due to the unrealistic assumption of knife-edge selectivity at an optimal age required for global MSY or maximum YPR, management often chooses to use a conditional MSY or YPR (depending on whether the stock-recruit relationship is known). Conditional analyses assume that existing selectivity and discard mortality patterns are maintained throughout the projections. The spawning stock biomass levels resulting from conditional MSY will be lower than global SSB_{MSY}, and the spawning stock biomass levels resulting from conditional maximum YPR will be even lower. As bycatch mortality increases, the resulting SSB tends to decrease, which can result in very low SPR values.

SPR analyses are life history-based proxies, which are dependent on the demographics of the species such as longevity, growth, and natural mortality. Yield is not an explicit consideration for SPR analysis. As with YPR, it does not account for a spawner-recruit relationship. Typical values for SPR proxies range from 20-60% of virgin spawning stock. Based on simulations (Clark, 1993), within this range of SPR levels the resulting equilibrium yield is at least 75% of MSY regardless of the true stock-recruit relationship.

Currently, a global MSY cannot be calculated for red snapper, because the spawner-recruit relationship is unknown. Additionally, global MSY or maximum YPR would be impossible to implement, because optimal selectivity is impractical to achieve. Despite the inability to achieve global MSY, the SSB associated with global MSY is still attainable if global MSY can be calculated. However, with no definitive stock-recruit relationship, the closest approximation to global MSY is true maximum yield-per-recruit (i.e., assuming a single fleet that harvests at an optimal age). The SEFSC has ongoing work attempting to calculate the true maximum YPR for red snapper, but the intricacies of the stock synthesis framework may impede the ability to determine a reliable value. Given the difficulties encountered with red snapper, the most appropriate proxy for MSY is likely to be the SSB or SPR associated with the maximum YPR, but this value has not yet been calculated.

The SEDAR 7 and 31 assessments used an alternate approximation to the global MSY referred to as 'MSY-link', which was calculated as the maximum YPR (i.e., because no stock-recruit relationship was implemented) when all sources of fishing mortality (directed, closed-season, and bycatch) were scaled up or down in the same proportion. Yield-per-recruit was then maximized by scaling the overall fishing mortality, while maintaining the ratios of relative fishing mortality by fleet. The SSB and associated SPR corresponding to the maximum yield obtained from the MSY-link scenario was then used as the SPR target proxy.

[1] Exceptions to maximum YPR exceeding MSY do exist, most notably with gag, where the stock assessment found that F_{MAX} was a more conservative estimate of F_{MSY} that $F_{30\% SPR}$. However, this may be due to the fact that gag is a protogynous hermaphrodite.

Using the MSY-link scenario, the 2005 SEDAR 7 red snapper assessment calculated SPR_{MSY} as SPR_{MSY} = 26%. In the current analysis, the MSY-link scenario resulted in an SPR_{MSY} = 23%. The change in SPR was due to different relative fishing mortalities in the terminal year of the assessment model. However, the MSY-link scenario is not a practicable proxy because it requires scaling bycatch fishing mortality in the same proportion as directed fishing mortality. Since projections indicate that short-term yield could be increased and the SPR proxy could still be obtained in 2032, the analyses implicitly suggest that bycatch should be increased. In practice, directed and discard mortality rates are not linked.

The SEFSC was asked to examine several levels of target SPR from 40% to 20%, plus the maximum conditional yield-per-recruit and the resulting SPR. The yield streams (Acceptable Biological Catches; ABCs) to rebuild by 2032 are shown in Table 1. Many of the scenarios would result in the stock able to rebuild to the target SPR level in 10 years or less, so yield streams assuming a 10-year rebuilding plan are shown in Table 2. The conditional maximum YPR resulted in a Gulfwide SPR of 12%, but this would cause an SPR in the eastern region of 2%.

Table 1. Yield streams and equilibrium yield for several levels of target SPR and the MSY-link scenario (23% SPR) for rebuilding by 2032.

ABC (Retained Yield Million Pounds Whole Weight) – Rebuild by 2032							
YEAR	**SPR 40%**	**SPR 30%**	**SPR 26%**	**SPR 24%**	**SPR 22%**	**SPR 20%**	**MSY-LINK**
2015	6.55	11.54	14.28	15.87	17.63	19.59	15.00
2016	7.26	11.79	13.96	15.11	16.31	17.55	14.25
2017	7.91	12.02	13.74	14.61	15.45	16.28	13.72
2018	8.32	11.99	13.38	14.05	14.67	15.26	13.10
2019	8.37	11.67	12.85	13.40	13.91	14.39	12.36
2020	8.31	11.40	12.49	12.99	13.46	13.90	11.86
2021	8.24	11.24	12.29	12.78	13.23	13.64	11.56
2022	8.21	11.15	12.18	12.65	13.08	13.48	11.38
2023	8.27	11.17	12.17	12.62	13.04	13.42	11.33
2024	8.35	11.22	12.19	12.63	13.03	13.40	11.31
2025	8.41	11.25	12.21	12.63	13.02	13.37	11.30
2026	8.47	11.29	12.22	12.63	13.01	13.35	11.29
2027	8.53	11.31	12.23	12.64	13.00	13.34	11.28
2028	8.58	11.34	12.24	12.64	13.00	13.32	11.28
2029	8.62	11.36	12.25	12.64	12.99	13.31	11.27
2030	8.66	11.38	12.26	12.64	12.99	13.30	11.26
2031	8.70	11.40	12.26	12.65	12.99	13.29	11.26
2032	8.73	11.41	12.27	12.65	12.99	13.29	11.25
Equil	9.05	11.61	12.40	12.74	13.04	13.30	11.26

Table 2. Yield streams and equilibrium yield for several levels of target SPR and the MSY-link scenario (23% SPR) for rebuilding within 10 years, by 2026.

ABC (Retained Yield Million Pounds Whole Weight) – Rebuild by 2016							
YEAR	**SPR 40%**	**SPR 30%**	**SPR 26%**	**SPR 24%**	**SPR 22%**	**SPR 20%**	**MSY-LINK**
2015	4.27	9.71	12.78	14.59	16.63	18.91	15.00
2016	4.92	10.23	12.80	14.19	15.64	17.14	14.25
2017	5.54	10.67	12.84	13.92	14.98	16.01	13.72
2018	5.98	10.84	12.67	13.52	14.33	15.07	13.10
2019	6.14	10.66	12.25	12.97	13.63	14.24	12.36
2020	6.16	10.47	11.93	12.59	13.20	13.76	11.86
2021	6.13	10.34	11.75	12.39	12.98	13.51	11.56
2022	6.13	10.27	11.66	12.28	12.84	13.35	11.38
2023	6.19	10.31	11.67	12.27	12.81	13.30	11.33
2024	6.27	10.37	11.70	12.28	12.81	13.28	11.31
2025	6.34	10.42	11.72	12.30	12.81	13.26	11.30
2026	6.40	10.46	11.75	12.31	12.81	13.24	11.29
Equil	7.03	10.88	12.00	12.47	12.88	13.22	11.26

Over the long-term, fishing at target SPR levels less than 30% will result in declines in the eastern Gulf stock of red snapper, while in the west the SPR will increase at all SPR levels between 20% and 40% (Figure 2). Current (2015) SPR levels are 11% for the eastern Gulf, 19% for the western Gulf, and 16% Gulfwide.

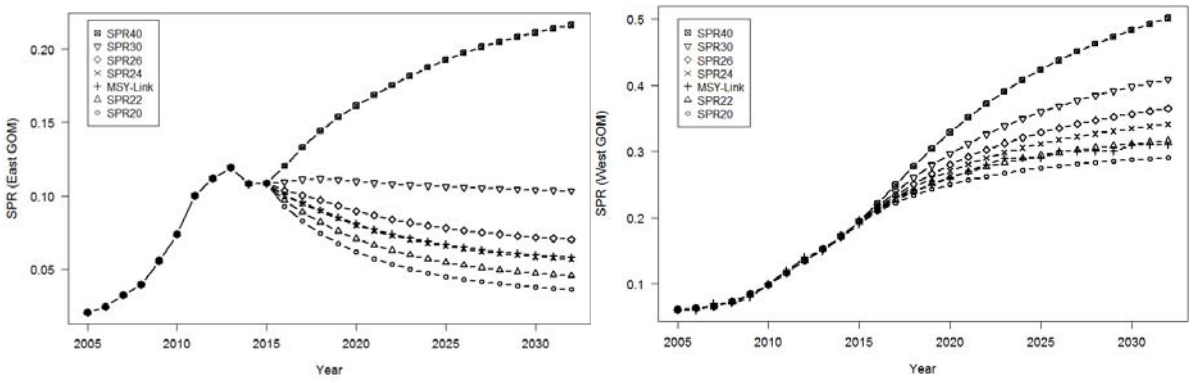

Figure 2. Regional trends in SPR when fishing for red snapper at target Gulfwide SPRs of 20% to 40% for a rebuilding target date of 2032.

Yield streams at conditional SPRs less than 26% provide short-term increases in ABC, but over the longer term target SPRs of 20% to 30% tend to converge to similar ABC levels (Figure 3).

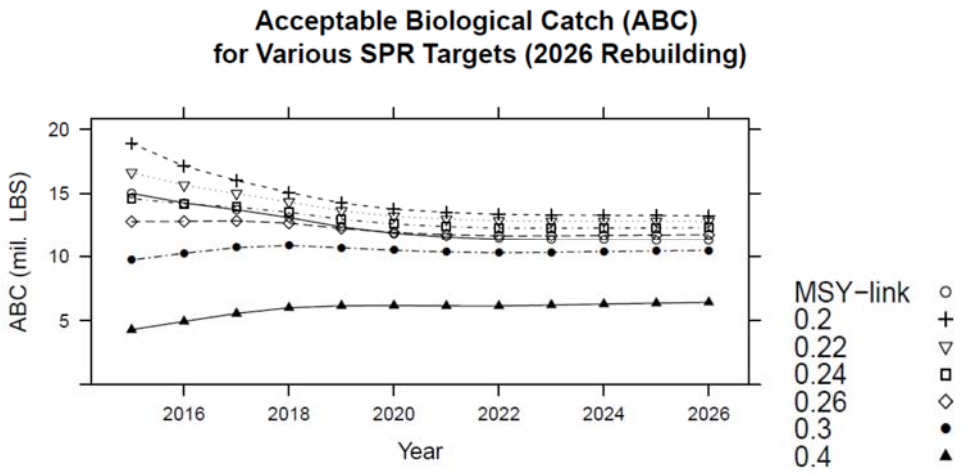

Figure 3. Trends in ABC yield streams for conditional SPR levels of 20% to 40% for a rebuilding target date of 2026.

The SSC concluded that even though the current proxy of 26% SPR was derived using the MSY-linked method, which is now considered impractical, there was little long-term benefit to changing the SPR. Additionally, lower target SPRs or conditional maximum YPR were projected to drive the stock in the eastern Gulf to very low SSB levels. The following motion was passed.

Motion: The SSC recommends, based on the latest analysis provided by the SEFSC, that there is insufficient biological evidence for a better MSY proxy than what is currently used by the Council (the yield corresponding to 26% SPR) for Gulf red snapper.
Motion carried unanimously

MRIP recalibration, selectivity changes and allocation

Dr. Shannon Cass-Calay gave two presentations on factors affecting changes in red snapper OFL and ABC projections. The first presentation reviewed the results of a series of sensitivity runs to evaluate the effect of recalibrated recreational removals and recreational selectivity on OFL and ABC projections. This analysis was previously presented to the Council. The sensitivity runs consisted of using the update assessment base model with the following projections:

- Project the annual OFLs at F26%SPR and the ABCs at FREBUILD from 2015-2032 using pre-MRIP recalibrated estimates.
- Project the annual OFLs at F26%SPR and the ABCs at FREBUILD from 2015-2032 using pre-MRIP recalibrated estimates and no new recreational selectivity block for 2011-2013

There is some evidence that recreational fishing selectivity in recent years has been shifting toward larger and older red snapper. Therefore, in these runs the model was allowed to re-estimate recreational selectivities in the most recent years (2011-2014). The OFL and ABC trends resulting from the two sensitivity runs and the base model run are shown in Figure 4.

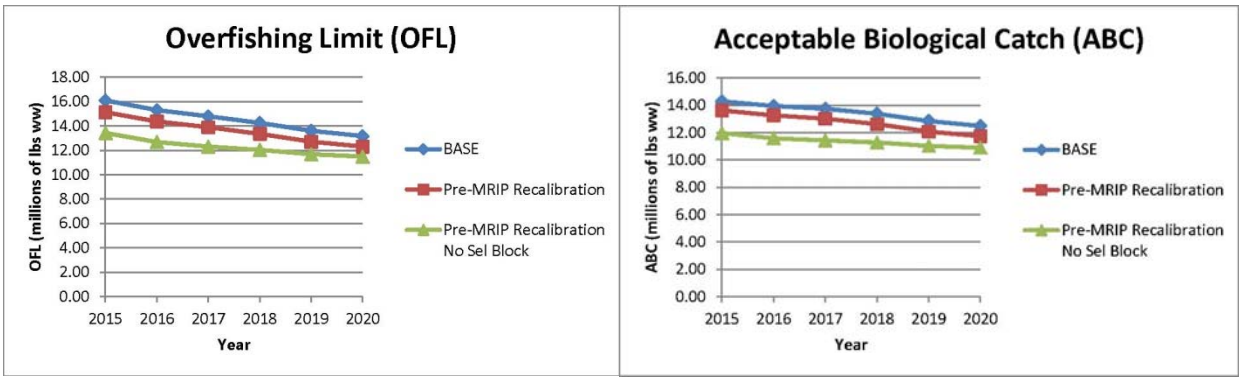

Figure 4. Trends in OFL and ABC projected by the red snapper update assessment base mode and two sensitivity runs.

The runs suggest that there are two reasons why higher OFLs and ABCs were projected in the update assessment: 1) use of the larger MRIP recalibrated estimates of recreational catch, and 2) recalibration of recreational selectivity in recent years.

The second presentation evaluated the effects of changing the commercial:recreational allocation. The recreational allocation was adjusted from the status quo 49% up to 70%. The Council has selected a recreational allocation of 51.5%. The resulting OFL and ABC yield streams are shown in Tables 3 and 4.

Table 3. Red Snapper OFL Yield streams and equilibrium yield for several allocations of recreational harvest and a target of 26% SPR by 2032.

OFL (Retained Yield Million LBS WW)						
YEAR	**Rec 49%**	**Rec 51.5%**	**Rec 55%**	**Rec 60%**	**Rec 65%**	**Rec 70%**
2015	16.10	16.35	16.70	17.19	17.69	18.17
2016	15.31	15.50	15.72	16.06	16.39	16.71
2017	14.79	14.96	15.12	15.38	15.64	15.89
2018	14.25	14.40	14.54	14.77	15.00	15.23
2019	13.60	13.73	13.87	14.09	14.31	14.52
2020	13.17	13.29	13.43	13.65	13.86	14.07
Equil	12.91	13.00	13.11	13.27	13.42	13.57

Table 4. Red Snapper ABC Yield streams and equilibrium yield for several allocations of recreational harvest and a target of 26% SPR by 2032.

ABC (Retained Yield Million Pounds Whole Weight						
YEAR	**Rec 49%**	**Rec 51.5%**	**Rec 55%**	**Rec 60%**	**Rec 65%**	**Rec 70%**
2015	14.29	14.49	14.76	15.18	15.61	16.05
2016	13.96	14.13	14.31	14.62	14.93	15.24
2017	13.75	13.89	14.04	14.29	14.53	14.78
2018	13.39	13.52	13.65	13.87	14.09	14.32
2019	12.85	12.97	13.10	13.31	13.52	13.73
2020	12.49	12.60	12.73	12.94	13.15	13.35
Equil	12.40	12.48	12.59	12.73	12.87	12.98

The OFL and ABC yields for the directed fisheries increased with increasing recreational allocation. All of the above yield streams achieve a Gulfwide stock rebuilding to 26% SPR by 2032, but with regional differences. SPR in the western Gulf continues to increase, but the SPR in the eastern Gulf declines, and the decline is exacerbated by increasing allocation to the recreational sector. At 70%, the eastern SPR decreases to 4% of unfished condition in 2032 (Figure 5).

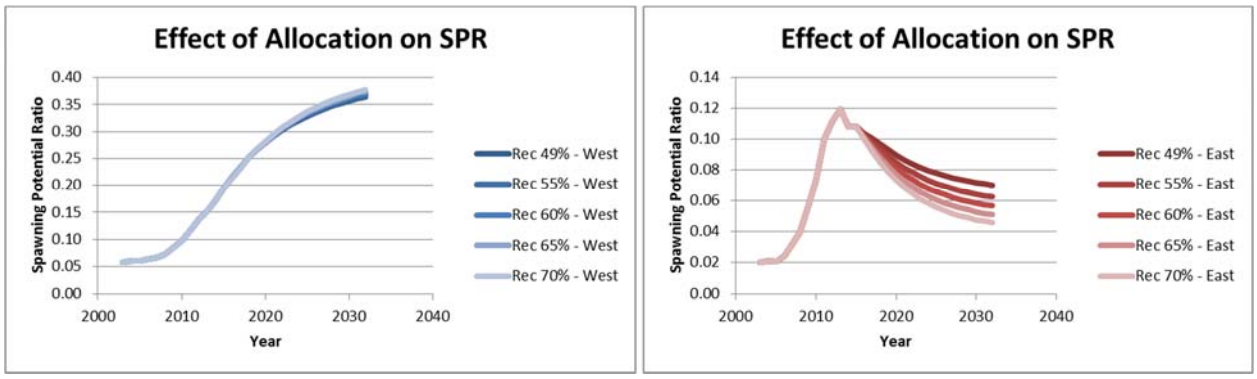

Figure 5. Regional trends in west and east red snapper SPR under various recreational allocations. Note that the graphs are drawn to different Y-axis scales.

The difference in SPR changes between the eastern and western stocks occurs because the distribution of the red snapper population and fishing effort differs. Increasing the recreational allocation disproportionately increases the fishing effort in the east (where most recreational fishing occurs) leading to an increased fraction of the population removed in the east as the recreational allocation increases. In addition, the selectivity patterns differ, with the recreational sector in the east selecting larger fish than the commercial sector.

One SSC member noted that the eastern SPR has been increasing until 2012, and asked for an explanation of why the trend changed. Dr. Cass-Calay explained that the increase until 2012 was due to reduced fishing mortality in the east and high recruitment years in the mid-2000s. However, from 2011-2014 there have been no strong recruitments observed, and some indices of

abundance have suggested a decline. The projections are carried forward with average recruitment and do not assume any strong recruitment years, resulting in continued declines.

One SSC member suggested that since OFL and ABC would increase with reallocation, the existing management measures would not exceed the new OFL and ABC. Therefore, the Council would have the option to not make any changes.

Following the presentations, the SSC passed the following motion:

Motion: The SSC reviewed the changing allocation scenarios between the commercial and recreational sectors of the Gulf red snapper fisheries and concluded that if the Council changes the allocation between the two sectors, this would prompt the need to reevaluate the OFL and ABC projections.

Motion carried unanimously

Evaluation of recent trends in gag CPUE indices

Dr. Cass-Calay reviewed 7 CPUE indices for gag that were updated through 2014. The 2013 SEDAR 33 gag stock assessment had used indices through 2012. Projected trajectories from SEDAR 33 based on average recruitment have not been realized. Recreational landings per angler hour have been declining since 2010 for headboats, and since 2008 for charter boats and private vessels. Fishery-independent indices have also shown declining CPUE indices in recent years. In addition, an index of recruitment success for northeastern Gulf of Mexico gag grouper by year based on a model that uses oceanographic conditions to project larval transport model runs projects below average recruitment since 2010 (Figure 6).

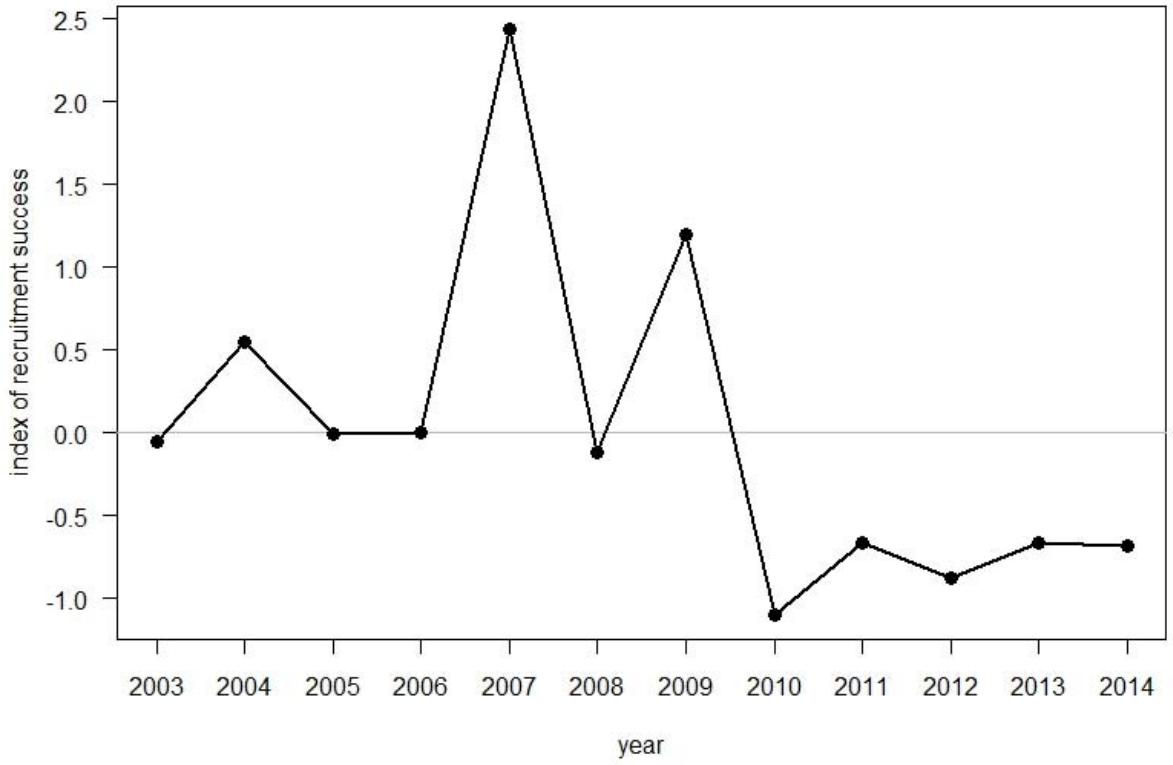

Figure 6. Expected recruitment anomalies for northeastern Gulf of Mexico gag grouper by year based solely on the effects of oceanographic conditions (update from SEDAR33-DW18).

Following presentation of the updated indices, the SSC passed the following motions.

Motion: The SSC reviewed the updated gag indices of abundances provided by the SEFSC and considers the analysis the best scientific information available LB/BG
Motion carried unanimously

Motion: The SSC recommends that, given the recent declines in fishery dependent and fishery independent indices of abundance for gag, that the Council use caution when setting ACL and ACT for 2015-2017.
Motion carried 15 to 1

Hogfish OFL and ABC

Mr. Dustin Addis (Florida FWC) presented a summary of OFL and ABC projections for the west Florida shelf hogfish stock. The SSC previously concluded that the west Florida Hogfish stock is neither overfished nor undergoing overfishing. The 2014 SEDAR 37 hogfish assessment used

data through 2012. Commercial and recreational catches for 2013 and 2014 were obtained from the FWRI Trip Tickets and Discard logbook program and from MRIP and the Southeast Region Headboat Survey respectively. 2015 catches were assumed to be the average of 2013-2014. Recreational discards were left out of assessment model but were included in the projections. Projections were made using Stock Synthesis 3 and $F_{30\% SPR}$ as a proxy for F_{MSY}. A yield stream of OFL was produced using a P* = 0.5 and a yield stream of ABC was produced using a P* = 0.4 with a CV of 0.37. Projection results are based on year 1 = 2016 and extending through 2026.

Yields are projected to decline from 2016 (Figure 7, Tables 5 and 6) toward equilibrium values of:

OFL = 161,900 lbs. whole weight
ABC = 159,261 lbs. whole weight
OY = 151,826 lbs. whole weight

For reference, the current hogfish ACL in the Gulf of Mexico is 208,000 pounds.

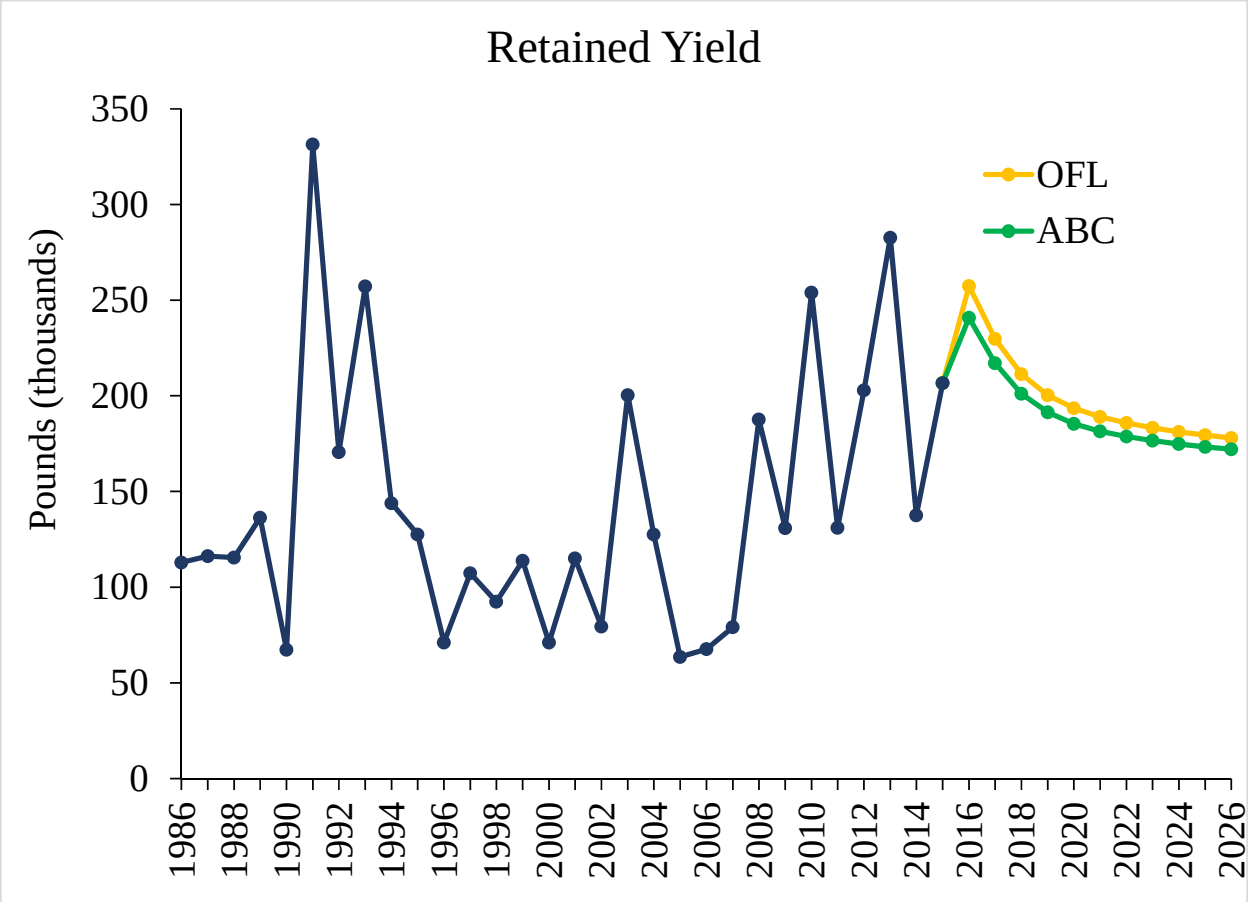

Figure 7. West Florida shelf hogfish stock OFL and ABC yield trends.

SSC members noted that declining yield streams appear to be a common feature of several stock OFL/ABC projections, and questioned if that was an artifact of Stock Synthesis. It was

suggested that this was more likely the result on recent high recruitment levels being replaced by average recruitment going forward.

Table 5. Projected OFL yield stream for the west Florida hogfish stock using P* = 0.5.

West Florida Shelf Hogfish Stock Projected OFL (pounds are in whole weight)				
YEAR	**Yield (pounds)**	**Yield (numbers)**	**Discards (pounds)**	**Discards (numbers)**
2016	257,140	95,407	288	89
2017	229,432	84,073	276	84
2018	211,044	77,691	266	82
2019	200,060	74,272	257	81
2020	193,281	72,332	248	80
2021	188,783	71,125	240	80
2022	185,557	70,294	233	80
2023	183,048	69,679	227	80
2024	181,002	69,190	221	80
2025	179,277	68,777	215	80
2026	177,806	68,410	211	80

Table 6. Projected ABC yield stream for the west Florida hogfish stock using P* = 0.4 and CV = 0.37.

West Florida Shelf Hogfish Stock Projected OFL (pounds are in whole weight)				
YEAR	**Yield (pounds)**	**Yield (numbers)**	**Discards (pounds)**	**Discards (numbers)**
2016	240,081	89,252	288	89
2017	216,808	79,429	278	85
2018	200,783	73,810	269	83
2019	191,139	70,778	261	82
2020	185,193	69,061	254	81
2021	181,275	68,000	247	81
2022	178,490	67,277	241	81
2023	176,341	66,748	235	81
2024	174,601	66,333	230	82
2025	173,143	65,985	225	82
2026	171,910	65,677	221	82

SSC members noted that ABC is close to OFL, but this is similar to results obtained by the PFMC's ABC control rule when using a CV = 0.37. In keeping with recent practice and concerns about the uncertainty associated with long-range projections, the SSC recommended

OFL and ABC for just three years. In the motions below, OFL and ABC yields are rounded to four digits, also in keeping with recent practice.

Motion: The SSC recommends that the west Florida hogfish stock OFL yield stream for the years 2016 – 2018 using a P* of 0.5 be as follows:
2016 257,100 lbs. ww
2017 229, 400 lbs. ww
2018 211,000 lbs. ww
Motion carried unanimously

Motion: The SSC recommends that the ABC for the west Florida hogfish stock for the years 2016-2018 using a P* of 0.4 and a CV of 0.37 be as follows in lbs. ww:
2016 240, 400 lbs. ww
2017 216,800 lbs. ww
2018 200,800 lbs. ww
Motion carried unanimously

The SSC considered offering an alternative ABC based on a constant catch strategy. However, a motion to recommend a constant catch ABC based on the average of the 2016-2018 ABCs was withdrawn because it would have resulted in the ABC exceeding OFL in 2018. The Council, however, has the option to set a constant catch ACL at any level that does not exceed any of the annual ABCs.

SSC members felt that if the Council would like to have alternative constant catch ABC yield streams, there is a need for the SEFSC to develop a standardized method for calculating constant catch yield streams.

Dr. Luiz Barbieri discussed the South Atlantic SSC's OFL and ABC projections for the east Florida/Florida Keys hogfish stock, which is overfished and undergoing overfishing. This stock extends partially into Gulf Council jurisdictional waters, but mostly occurs in South Atlantic waters. South Atlantic SSC rebuilding projections were made at a P* = 0.275. Given that the stock occurs primarily in South Atlantic waters, the SSC felt that the South Atlantic SSC should take the lead in setting OFL and ABC.

Motion: The SSC concurs with the SAFMC SSC OFL and ABC recommendations for the FL Keys eastern Florida hogfish stock. .
Motion carried unanimously

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 $SSB_{30\% SPR}$.

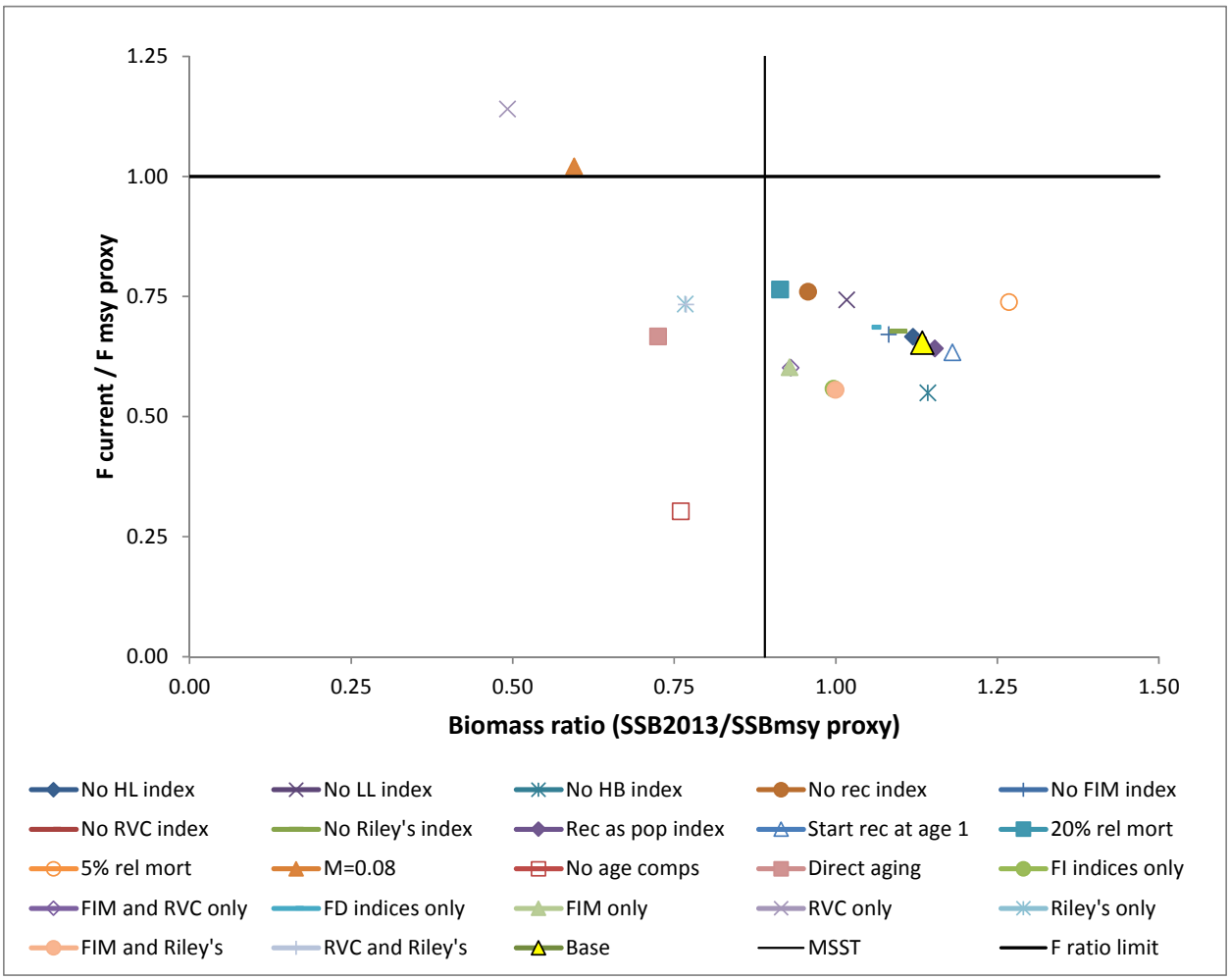

Figure 8. Summary of results of base model rum and sensitivity runs of mutton snapper in SEDAR 15A update assessment.

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

Other Business

The SSC is currently scheduled to elect a new Chair and Vice-chair at its next meeting (tentatively scheduled for July 2015). However, since this will be the first meeting of a reconfigured SSC, there may be several members who are new to the process. For this reason, some SSC members feel that the election should be deferred until the subsequent SSC meeting (tentatively scheduled for September 2015). This will be discussed at the first meeting of the reconstituted SSC.

SSC Members Present

Standing SSC
William Patterson, Chair
Luiz Barbieri, V. Chair
Harry Blanchet
Benjamin Blount
Shannon Cass-Calay
Bob Gill
Read Hendon
Walter Keithly
Kai Lorenzen
Jim Tolan
John Ward
Elbert Whorton

Special Reef Fish SSC
Jason Adriance
Robert Ellis
John Mareska
Brooke Shipley-Lozano

Council and Staff
Steven Atran
Assane Diagne
Karen Hoak
Ava Lasseter
Camp Matens

Others
Dustin Addis, FL FWCC
Richard Brame, CCA
Ken Brennan, NMFS/SEFSC
Dale Diaz, MS DMR
Michael Drexler, Ocean Conserv.
Dan Goethel, NMFS/SEFSC
Joe O'Hop, FL FWCC
Jessica Stephen, NMFS/SERO
Russell Underwood
Wayne Werner