

**Standing, Special Reef Fish and Special Mackerel SSC
Meeting Summary
Tampa, Florida
January 6-8, 2015**

The meeting of the Standing and Special Reef Fish SSC was held January 6-8, 2015. A meeting of the Standing and Special Mackerel SSC was also held on January 7, 2015.

The agenda was accepted with changes to the order of presentations. The following minutes were accepted by acclamation as written.

- August 6, 2013 Standing and Special Mackerel SSC summary minutes
- August 6-7, 2014 Standing and Special Reef Fish SSC summary minutes
- October 1-2, 2014 Standing and Special Reef Fish SSC summary minutes

Will Patterson announced that he would be the SSC representative at the January 26-29, 2015 Council meeting in Point Clear, Alabama.

Red Snapper Update Assessment

Dr. Shannon Cass-Calay presented a NMFS update to the SEDAR 31 red snapper benchmark assessment. The written assessment report was not yet available for review. However, given that this is an update and the methods used were the same as SEDAR 31, except for instances when the assessment team was responding to specific terms of reference from the Council, the Science center staff felt that the PowerPoint presentation to the SSC should suffice for the SSC meeting. The assessment input and output files were provided on the Council's file server in case anyone was interested in the technical specifications.

The SEDAR 31 Stock Synthesis 3 base model plus two alternative models using a low natural mortality rate (M) and a high M were used with landings data updated through 2013. The recreational MRIP landings were adjusted using methods from the September 2014 MRIP Calibration workshop, where possible. A review of the MRIP Calibration workshop results was included in the October 2014 SSC meeting report. In addition, a selectivity block (2011-2013) was used on all recreational fleets to accommodate recent changes in fishing behavior that indicates a shift in selectivity to older (heavier) fish in recent years. The results of the MRIP adjustments on retained landings and on discards are shown below in Figures 1a and b and 2a and b. The east and west portions of the stock were modeled separately.

The revised recreational landings are generally 10% to 20% higher than in SEDAR 31. However, the revised discards show proportionately higher rates than in SEDAR 31. After investigating the reason for this, the NMFS Science Center staff stated that at least part of this was due to an MRIP adjustment to account for landings made outside of peak fishing hours. MRIP made this adjustment by calculating a ratio of total catches to catches made in peak periods. However, these ratios were calculated separately for type A, B1, and B2 catches, resulting in different adjustments for each type of catch.

Figure 1a and 1b. Effect of Rescaling MRIP Estimates - Landings

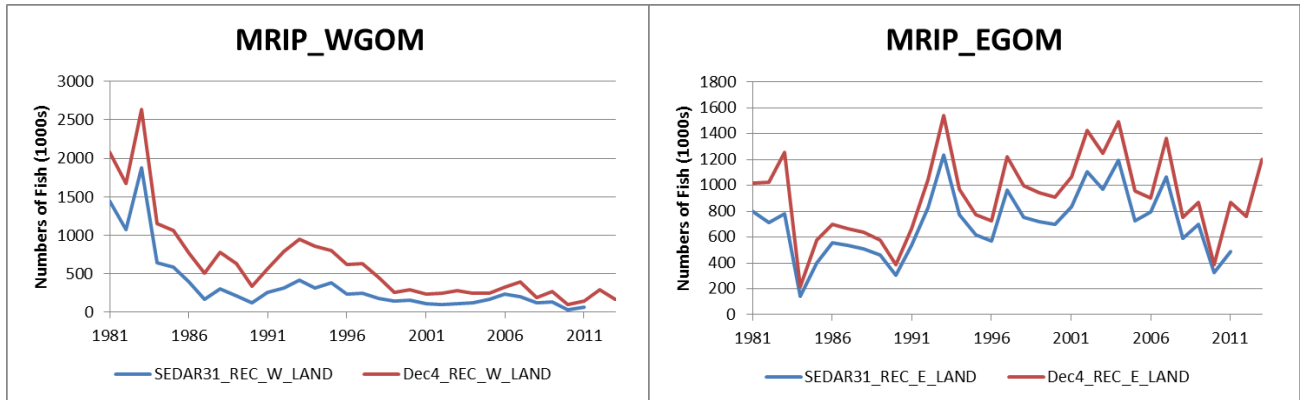
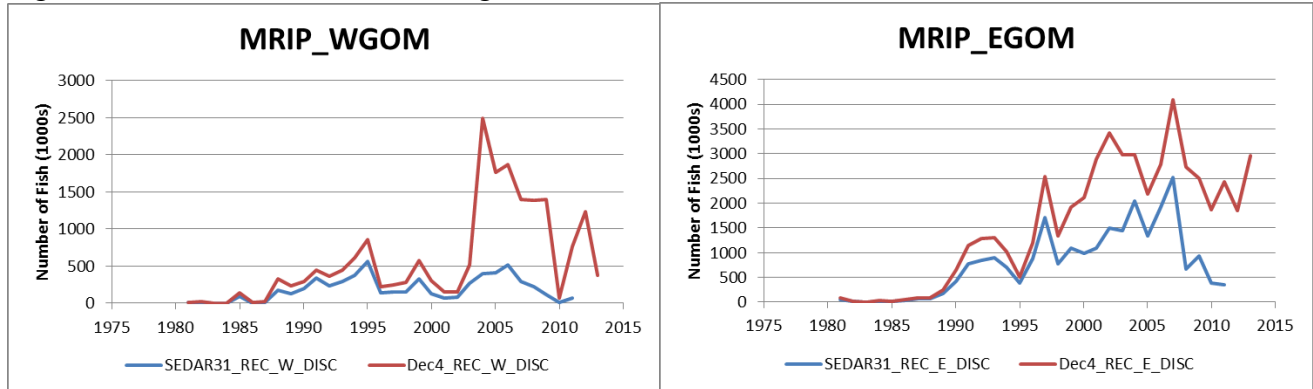


Figure 2a and 2b. Effect of Rescaling MRIP Estimates - Discards



The results of the assessment indicated that stock biomass estimates are continuing to increase in both the east and west, but remain below the management target of 26% SPR (Figure 3). Stock biomass estimates in the east show a slight downtrend in the most recent years, which results from strong year-classes exiting the stock, as well as recent low recruitment estimates.

The combined east and west stock biomass estimates, while increasing, remain below the minimum stock size threshold (Figure 4a), indicating that the stock remains in an overfished condition. However, estimated fishing mortality remains below the maximum fishing mortality threshold (Figure 4b), indicating that overfishing is not occurring.

Figure 3. Estimated red snapper spawning biomass levels relative to management target. Area 1 (red) is west Gulf, and Area 2 (blue) is east Gulf. The management target line indicates a Gulf-wide spawning potential ratio of 26%.

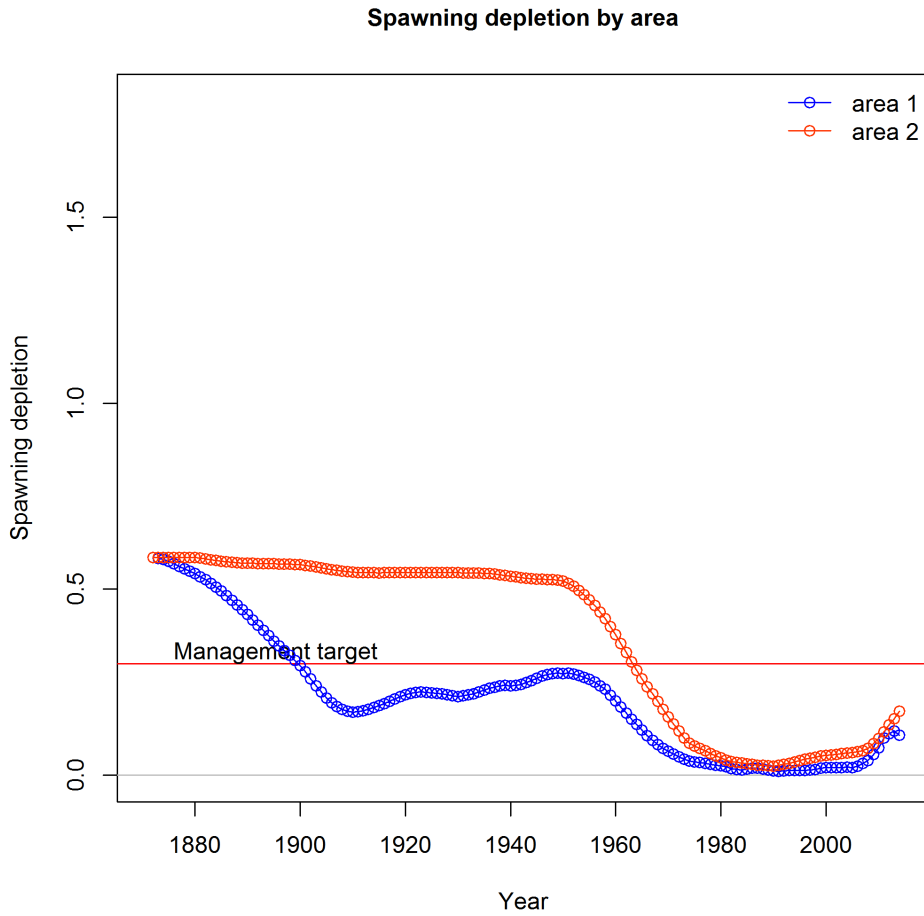
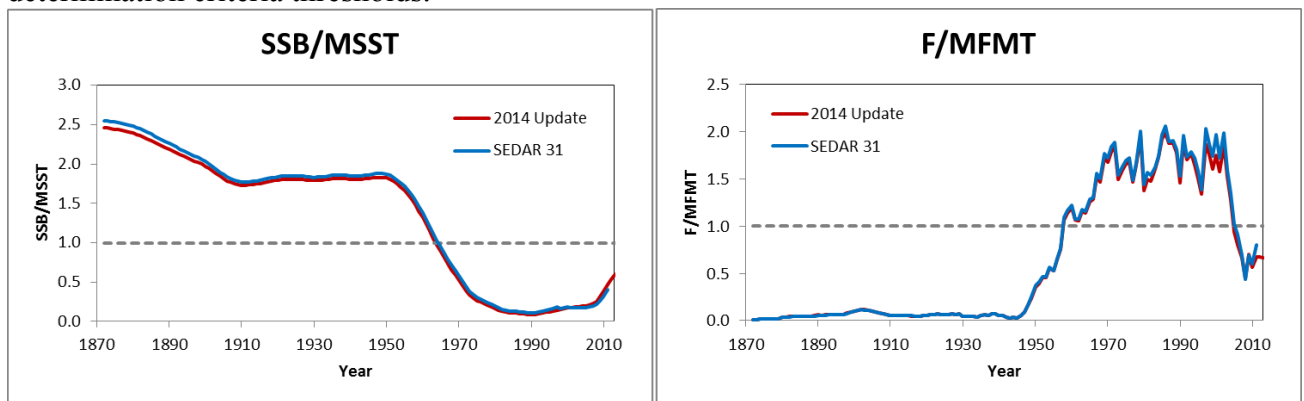


Figure 4a and b. Estimated spawning stock biomass and fishing mortality rate relative to status determination criteria thresholds.



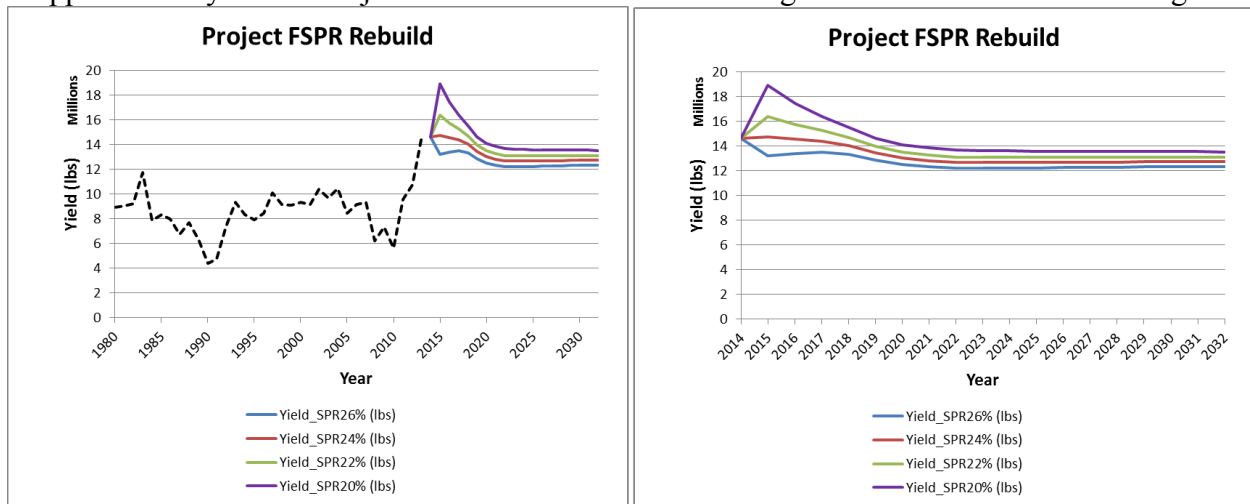
Based on the assessment presentation plus additional sensitivity runs requested by the SSC, the following motion was passed.

The SSC moves that the red snapper update base assessment model is the best scientific information available and is acceptable for management purposes. The stock is estimated to remain overfished, but is not undergoing overfishing.

Motion passed 14-0, with one abstention.

Projections for future landings were made under several alternative levels of fishing mortality, and assuming average recent recruitment levels. The projections for rebuilding yields show a decline to equilibrium levels over time as a result of strong year classes exiting the fishery combined with recent poor recruitment in the eastern Gulf (Figure 5a and b). For lower SPR target levels, greater yield could be taken in the near term under the assumption of rebuilding stock biomass to a given SPR target by 2032. However, the SSC received input from Dr. Roy Crabtree that rebuilding timelines would likely change under different SPR targets given that the Magnuson-Stevens Fishery Conservation and Management Act and the National Standard guidelines require that rebuilding must be accomplished in ten years if possible, or if the stock cannot be rebuilt in ten years or less, one generation time plus the time to rebuild in the absence of fishing mortality.

Figure 5a and b. Historical red snapper yields (Figure 5a) and projected yields to rebuild the red snapper stock by 2032. Projections assume that 2014 landings are the same as 2013 landings.



The SSC reviewed several yields when fishing a different F_{MSY} proxies (Table 1). The proxy specified in the red snapper rebuilding plan is $F_{SPR26\%}$. The yields at other proxies were calculated by NMFS at the request of the Council in order to facilitate a discussion of alternative MSY reference points. That discussion is included later in this report. For purposes of setting the OFL, the current proxy specified in the rebuilding plan was used.

Table 1. Red snapper annual yields for OFL in millions of pounds whole weight when projected for various F_{MSY} proxies.

Projected Yield at FSPR (millions of lbs) (Note: Does not achieve rebuild target by 2032)

YEAR	FSPR 26%	FSPR 24%	FSPR 22%	FMAX (SPR20%)	SEDAR 31 (FSPR 26%)
2015	14.73	16.03	17.42	18.94	12.52
2016	14.56	15.50	16.46	17.44	11.25
2017	14.40	15.08	15.75	16.41	10.88
2018	14.02	14.54	15.03	15.49	10.92
2019	13.44	13.86	14.26	14.63	10.94
2020	13.03	13.42	13.78	14.11	11.10
Equil.	12.87	13.13	13.37	13.57	11.69



The SSC felt that projections beyond three years are highly uncertain, and therefore established OFL for three years. The red snapper assessment should be updated no later than 2017 in order to establish OFL for subsequent years.

The SSC recommends that the OFL (F_{msy} proxy = $F_{SPR26\%}$) for red snapper be set at:

2015 - 14.73 mp ww

2016 - 14.56 mp ww

2017 - 14.40 mp ww

Motion passed unanimously.

The SSC noted that although fishing at the F_{MSY} proxy is projected to result in the target stock level, being achieved, it will not do so within the time constraint of rebuilding by 2032. In order to rebuild by 2032, the yield stream shown in Table 2 is the maximum at which the stock could be fished.

Table 2. Red snapper annual yields to rebuild the stock by 2032 in millions of pounds whole weight when projected for various F_{MSY} proxies.

Projected Yield at FSPR REBUILD (millions of lbs) (Note: Achieves rebuild target by 2032)

YEAR	FSPR 26%	FSPR 24%	FSPR 22%	FMAX (SPR20%)	SEDAR 31 (FSPR 26%)
2015	13.22	14.71	16.38	18.21	11.44
2016	13.40	14.55	15.74	16.98	10.45
2017	13.51	14.39	15.26	16.10	10.20
2018	13.33	14.01	14.67	15.28	10.29
2019	12.87	13.43	13.97	14.46	10.35
2020	12.51	13.03	13.51	13.96	10.53



To calculate ABC yields, the SSC used a probability distribution function (PDF) on OFL from the base model and a P^* of 0.427. These are the parameters used in SEDAR 31 for setting ABC. However, when applied to the OFL yields, the resulting ABCs exceeded the rebuilding yields in Table 2. In order to avoid exceeding the rebuilding yields, the ABC values were based on reductions from $F_{Rebuild}$. This is consistent with the approach taken after SEDAR 31. The resulting yields are shown in Table 3 along with the associated OFL and $F_{Rebuild}$ yields. Only yield streams for ABC at $F_{SPR26\%}$ were produced, but NMFS staff indicated that they could produce ABC yield streams for other F_{MSY} proxies.

Table 3. ABC yield stream in millions of pounds whole weight based on reduction from F_{Rebuild} yields at $F_{\text{SPR}26\%}$ and $P^* = 0.427$. OFL and F_{Rebuild} yield streams from Tables 1 and 2 are included for comparison.

Year	OFL	F_{Rebuild} Yield by 2032	ABC yield at $F_{\text{SPR}26\%}$ and $P^* = 0.427$
2015	14.73	13.22	13.00
2016	14.56	13.40	13.21
2017	14.40	13.51	13.32
2018	14.02	13.33	13.13
2019	13.44	13.87	12.67
2020	13.03	12.51	12.33

SSC members questioned why the ABC and F_{Rebuild} yield stream increased in the early years while the OFL yield stream decreased. Science Center staff suggested that at lower yields strong year classes from the mid-2000s were projected to persist longer in the population. However, eventually all yield streams would move down under a constant average recruitment projection given recent lower recruitment levels.

Staff reminded the SSC that the Council preferred constant catch ABCs to declining yield streams. However, the SSC, after discussion felt that providing the ABCs based on the control rule provided the Council with the options to set the ACL at either the maximum ABCs for each year or at a constant catch ACL that did not exceed any of the ABCs. As with OFL, the SSC felt that setting ABC beyond three years entailed too much uncertainty.

The SSC recommends that the ABC for red snapper be set using a PDF of yield from the base model projected at F_{Rebuild} to SSB at 26% SPR in 2032 and applying a P^* of 0.427.

2015 - 13.00 mp ww

2016 - 13.21 mp ww

2017 - 13.32 mp ww

Motion passed unanimously.

It was noted that these OFLs and ABCs are based on an assumption that the 2014 recreational landings will be the same as the 2013 landings. Preliminary indications are that the 2014 landings are less than 2013. If so, OFL and ABC for 2015 and beyond could increase once the final 2014 landings are determined and incorporated into the projections.

Greater Amberjack Rebuilding Timelines

Dr. Nancie Cummings gave a presentation to provide updated projections for the ABC options in Action 1 of the draft Framework Action - Modifications to the Greater Amberjack Annual Catch Limits and Annual Catch Targets. These options are:

- Option 1.** Maintain the ABC, ACL, and ACT at the 2014 level until the next assessment.
- Option 2.** Use the ABC schedule recommended by the SSC from 2015 to 2018.
- Option 3.** Set a constant ABC at the level recommended by the SSC for 2015.
- Option 4.** Set the stock ACL at zero. No landings of greater amberjack.

These ABC scenarios are shown in Table 4.

Table 4. Greater amberjack ABC options

Projection Scenarios (Base Model and Alternatives)

Scenario	Year						Notes
	2014	2015	2016	2017	2018	2019+	
June 2014 SSC Base- SPR30 = OFL's	1.528	2.139	2.687	2.906	2.986	3.068	SS Model Derived values using SSC base model choice @SPR30, 2019+
June 2014 SSC Base- 75%SPR30 = ABC	1.180	1.720	2.230	2.490	2.620	2.730	SS Model Derived values using SSC base model choice at 75%SPR30,
Option1 ABC's	1.780	1.780	1.780	1.780	1.780	1.780	2014 set = Amendment 35 ABC
Option2 ABC's	1.780	1.720	2.230	2.490	2.620	2.620	2014 set = Amendment 35 ABC
Option3 ABC's	1.780	1.720	1.720	1.720	1.720	1.720	2014 set = Amendment 35 ABC
Option4 ABC's	1.780	0.0	0.0	0.0	0.0	0.0	2014 set = Amendment 35 ABC

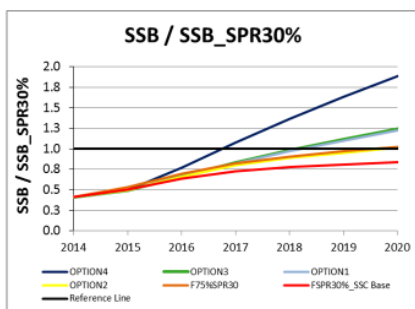
Alternative projections scenarios defined by GMFMC staff, via email to SEFSC Directorate and SFD Division Chief, 11-November-2014



Under all four options the fishing mortality was projected to be below MFMT and the stock was projected to rebuild to and beyond the spawning stock biomass (SSB) levels at $F_{SPR30\%}$ (Figure 6 and Table 5).

Figure 6/Table 5. Rebuilding times for four greater amberjack rebuilding scenarios.

Results: Overfished Status Reference Point: SSB/SSB_SPR30% 2014-2020



SS Estimated Recovery Year for Gulf of Mexico Greater Amberjack under four Alternative Projection Scenarios

Projection Scenarios (4 Alternatives to June 2014 SSC Base)	Recovery Year (to reach SSB@MSST)	Recovery Year (to reach SSB@SPR_30%)
Option1	2017	2019
Option2	2017	2020
Option3	2017	2019
Option4	2016	2017



Options 1 through 3 all reach MSST in 2017 and $SSB_{SPR30\%}$ in 2019 or 2020. The no fishing scenario has a slightly faster rebuilding time, reaching MSST in 2016 and $SSB_{SPR30\%}$ in 2017.

The SSC was not asked to recommend an option, but to comment on the adequacy of the analysis for management. After reviewing the presentation, the SSC passed the following motion.

The SSC moves that the greater amberjack projections provided by the SEFSC are sufficient to inform management actions by the Gulf Council. Options 1-4 among landing scenarios each are projected to rebuild the greater amberjack stock by 2020.

Motion passed unanimously.

FWC Mutton Snapper Update Assessment

The mutton snapper assessment was not completed in time for the SSC meeting. Joe O'Hop from FWRI gave a progress report on the assessment. However, the report has not yet incorporated recommendations of reviewers from the SEDAR 15a assessment. Since the report is not yet complete, the SSC did not make any recommendations. The SSC will review the assessment and make recommendation when the report is completed, which is expected to be in time for the next SSC meeting in March.

SEDAR 38 King Mackerel Benchmark Assessment

Dr. Michael Schirripa presented the SEDAR 38 king mackerel benchmark assessment. New information for this assessment includes a new definition of the winter mixing zone, which is now defined to be south of the Florida Keys out to the shelf edge from Monroe County, Florida in the east to the Dry Tortugas in the west. Fish caught in this zone during November 1st to March 31st are assigned 50:50 to the Atlantic and Gulf stocks. This resulted in an annual average increase in landings in weight of 6% in the Atlantic and a decrease of 7% in Gulf.

The base assessment model was constructed in Stock Synthesis 3 (SS3). It was initially configured to replicate the earlier VPA assumptions, and then reconfigured according to new data assumptions/best practices. Additional investigative model runs were made to evaluate the effects of length-based selectivity, estimated constant growth from age-at-length data, and the effect of allowing annual deviations in male and female L_{∞} (asymptotic maximum size) and k (growth coefficient). A second model using the VPA-2Box model was constructed for a continuity run. All four SS3 model runs showed similar trends in SSB but with different levels of uncertainty. A plot of the stock-recruit data indicated no discernable stock-recruit relationship and likelihood profiling did not indicate a steepness value different than 0.99. Therefore, steepness was fixed at 0.99 based on the recommendation of the review panel. The implicit assumption under such an approach is that future recruitment projected in the near term will resemble recruitment in the recent past.

The results of a Jitter analysis was not as stable as some other models, which is likely due to error in catch or estimation of historic fishing mortality. A retrospective analysis showed no patterns. Several model runs were made to examine the effect of excluding selected data. All model runs showed that stock biomass estimates remain above B_{MSY} (Figure 7) and fishing mortality estimates remain below F_{MSY} (figure 8), indicating that the Gulf king mackerel stock is neither overfished nor undergoing overfishing.

Figure 7. King mackerel biomass trends.

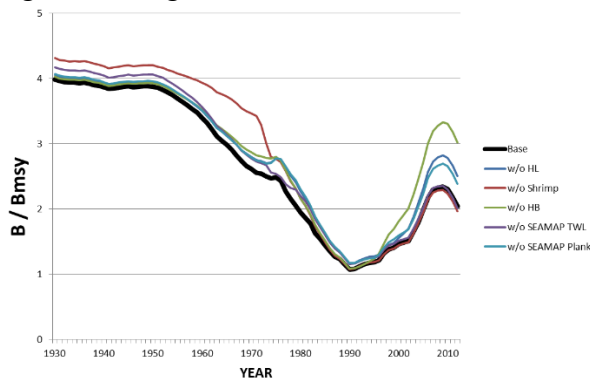
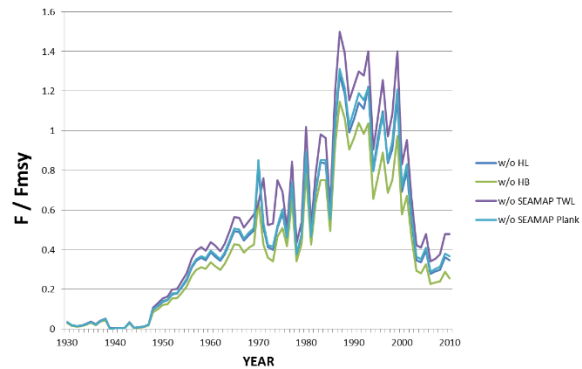


Figure 8. King mackerel fishing mortality trends.



Following the presentation and discussion, the SSC passed the following motion.

The SSC moves that the SEDAR 38 king mackerel base assessment model is the best scientific information available and is acceptable for management purposes. The stock is estimated not to be overfished or undergoing overfishing.

Motion passed 11-1.

The SSC reviewed a PDF table based on an F_{MSY} proxy of $F_{SPR30\%}$. OFL is the yield at which $P^* = 0.50$. For ABC, the SSC employed the ABC control rule Tier 1 spreadsheet to estimate P^* . The result of the Tier 1 spreadsheet analysis was $P^* = 0.434$. The yields for these P^* values are shown in Table 6.

Table 6. Gulf king mackerel yield streams in millions of pounds whole weight at $P^* = 0.50$ and $P^* = 0.43$

P^*	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
0.50	10.11	9.61	9.27	9.11	8.95	8.81	8.68	8.60	8.58	8.60
0.43	9.62	9.21	8.88	8.71	8.55	8.43	8.29	8.20	8.19	8.23

Since this stock is neither overfished nor undergoing overfishing, the SSC felt comfortable making OFL and ABC yield recommendations for a five year period.

The SSC moves that the OFL for king mackerel in the Gulf of Mexico be set as the yield stream at $F_{SPR20\%}$.

2015 - 10.11 mp ww

2016 - 9.61 mp ww

2017 - 9.27 mp ww

2018 - 9.11 mp ww

2019 - 8.95 mp ww

Motion passed unanimously.

The SSC moves that the ABC for king mackerel in the Gulf of Mexico be set at $P^* 0.43$ applied to the PDF.

2015 - 9.62 mp ww

2016 - 9.21 mp ww

2017 - 8.88 mp ww

2018 - 8.71 mp ww

2019 - 8.55 mp ww

Motion passed unanimously.

Council staff noted that the Council has requested a constant catch ABC for other stocks in order to avoid declining catch limits. The SSC discussed this but felt that the Council could choose to set a constant catch ACL within the limits of the ABC yield stream. They noted that the equilibrium yield at $F_{SPR30\%}$ was 8.53 mp, and considered recommending this as a constant catch ACL level. However, most SSC members felt that the ACL was a management decision and that the SSC should not offer management advice, only scientific advice. A motion was made to recommend that, should the Council prefer a constant catch scenario, then the equilibrium yield at $F_{SPR30\%}$ (8.53 mp) is recommended as the ACL. The motion failed by a vote of 4 to 8.

Presentation – Estimation of Red Tide Mortality on Gag

David Chagaris (FWRI) gave a presentation in which he estimated the mortality rate of gag grouper caused by red tides from 2002-2014. The estimates were based on satellite imagery of the red tide spatial extent and duration, severity as measured by cell concentration estimates, species distribution estimates, and mortality estimates using a logistic response function. He noted that cell concentration is not necessarily a good indicator of toxicity of a red tide bloom, and that other factors are involved. Therefore, several models were run with different mortality responses to cell concentration estimates. The results of this modeling exercise were that that 2014 did not appear to be an exceptional year for red tide-induced mortality in gag (Figure 9a,b,c).

Under a range of cell count mortality impacts, Dr. Chagaris estimated that the 2014 red tide event was responsible for 1.8% to 3.5% of the total gag biomass killed (Figure 10 and Table 7). By comparison, the 2005 red tide event was estimated to be responsible for 44.7% to 58.9% of the gag kill. The impact of the 2014 red tide was 4% to 7% of the 2005 event.

Dr. Chagaris felt that with further refinement and incorporation into an Ecospace model, this approach could eventually be used to make near real-time predictions of red tide impacts on fish.

Figure 9a, b, and c. Estimated extent and severity of red tide events off the west Florida coast from 2001-2014 and overlap of severe events with gag habitat. Estimates were derived from the Ecopath modeling approach presented by Dr. Dave Chagaris from FWRI.

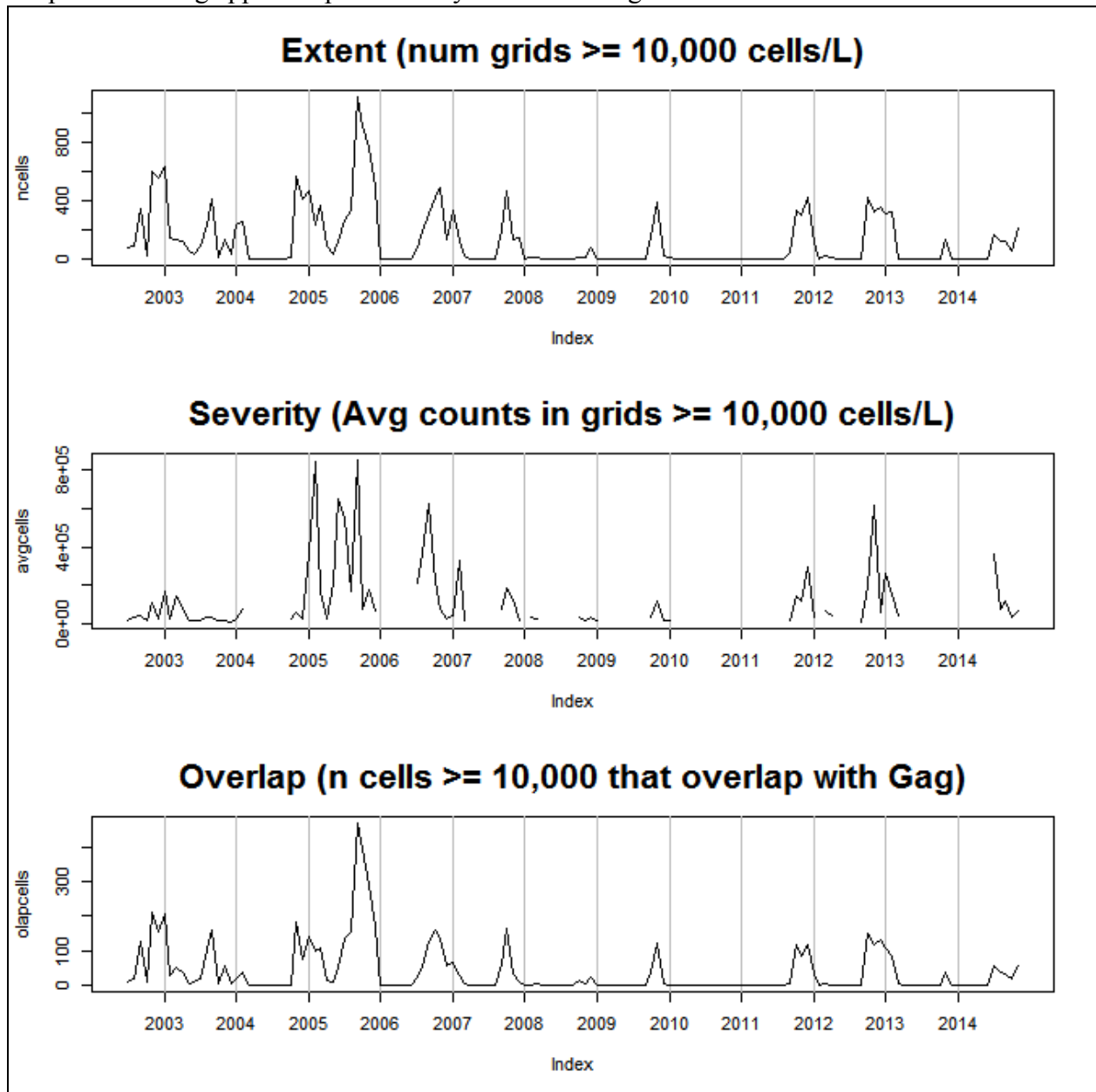
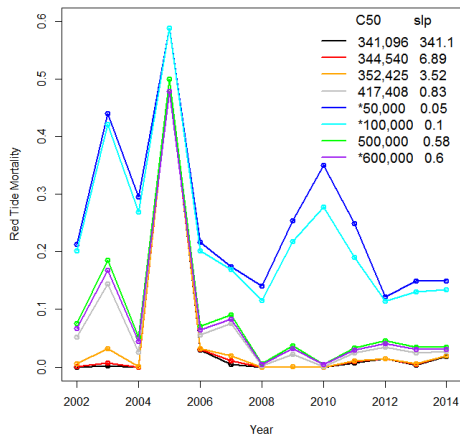


Figure 10 and Table 7. Estimated gag proportional mortality from red tide under several estimates of red tide cell counts.



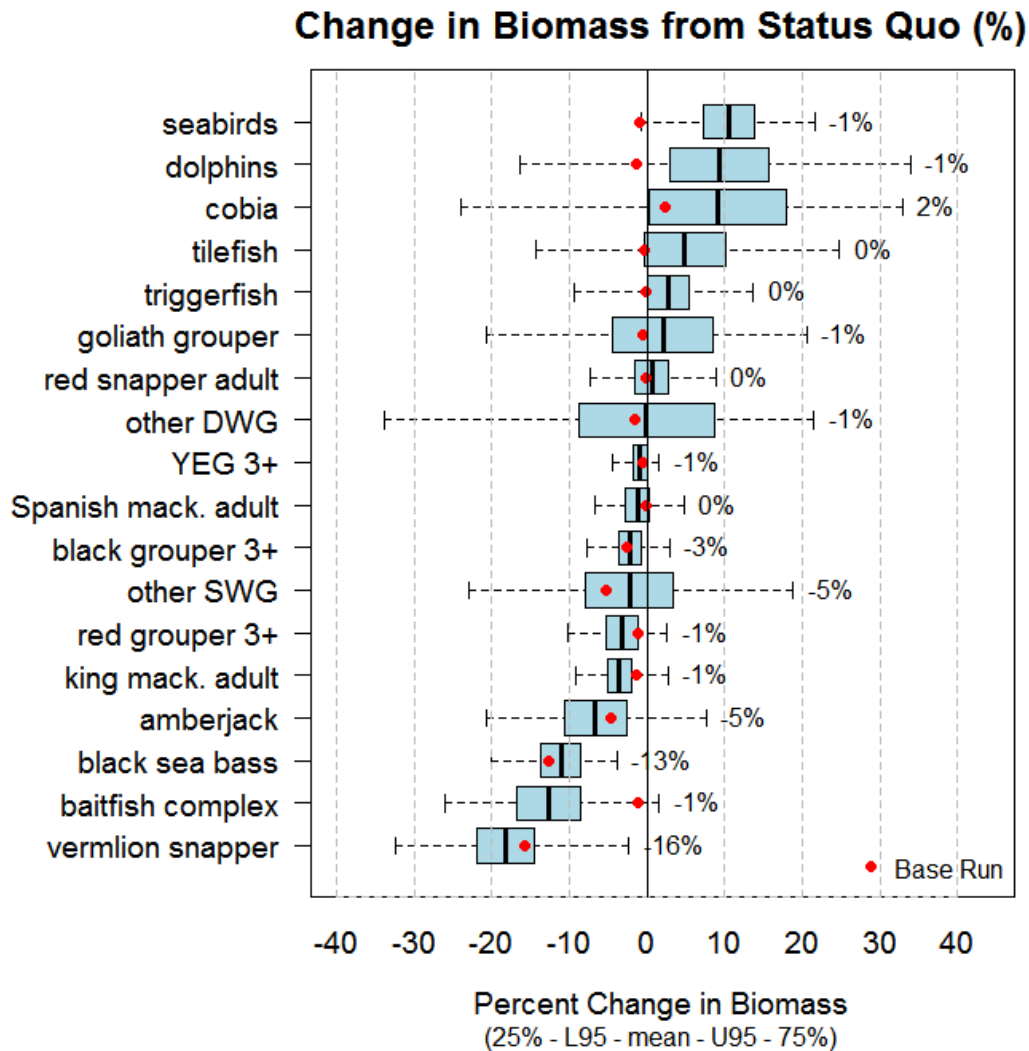
	curve 1	curve 2	curve 3	curve 4	curve 5	curve 6	curve 7	curve 8
2002	0.000	0.001	0.006	0.052	0.213	0.202	0.076	0.050
2003	0.002	0.007	0.032	0.145	0.441	0.422	0.186	0.132
2004	0.000	0.000	0.001	0.026	0.296	0.269	0.052	0.029
2005	0.500	0.500	0.500	0.500	0.589	0.589	0.500	0.447
2006	0.029	0.031	0.032	0.056	0.217	0.202	0.071	0.052
2007	0.004	0.011	0.020	0.076	0.174	0.169	0.091	0.067
2008	0.000	0.000	0.000	0.002	0.140	0.116	0.006	0.003
2009	0.001	0.001	0.001	0.022	0.254	0.218	0.037	0.022
2010	0.000	0.000	0.000	0.001	0.351	0.278	0.005	0.002
2011	0.007	0.009	0.011	0.025	0.249	0.191	0.033	0.024
2012	0.014	0.014	0.015	0.035	0.122	0.114	0.046	0.033
2013	0.003	0.004	0.006	0.025	0.149	0.130	0.035	0.024
2014	0.018	0.020	0.019	0.027	0.149	0.134	0.035	0.025

Presentation – Ecosystem modeling for single-species management

Dr. Chagaris presented a demonstration of how an ecosystem model could be used to evaluate the ecosystem impacts of single-species management and to characterize environmental uncertainty in stock projections. The demonstration applied gag to an Ecopath with Ecosim and Ecospace model that was developed for the Florida west shelf and presented to the Council in March 2013. The model focuses on 11 managed reef fish species plus other species at various life stages, and 14 fishing fleets. It is calibrated to time series from 1950-2009.

To demonstrate an application to gag, projections were considered at six fixed fishing mortality rate management scenarios. Projections were deterministic (no uncertainty), based on Monte-Carlo simulations, or based on MultiSim simulations. For the Monte-Carlo and MultiSim simulations, the probability of overfished ($B < MSST$) or overfishing ($F > MFMT$) could be determined for each projection scenario. Projections from the ecosystem models were similar to those from single species model used in the gag 2009 update assessment. Projected changes in other groups had little impact on gag, suggesting that predation is poorly defined or that competition effects are low at small stock sizes. With respect to impacts on other species, rebuilding of the gag stock has a potential for negative impacts on vermilion snapper, black sea bass, and greater amberjack, plus modest impacts on other species (Figure 11).

Figure 11. Projected changes to biomass of other species under gag rebuilding scenarios.



SSC members were impressed with the model and recommended that Dr. Chagaris coordinate his efforts with the integrated ecosystem assessment team at NMFS. Suggestions were made for various additional biological and geophysical data to include in the model. A suggestion was made to establish a liaison between the ecosystem scientists and the stock assessment scientists.

Reevaluation of Gag OFL/ABC Recommendation

Steven Atran reviewed that the Council in October had not accepted the SSC's ABC recommendation for gag. This recommendation was based on an assumption that the 2014 red tide mortality event would have the same impact as the 2005 red tide event. The Council felt that the SSC had not provided sufficient rationale for making that assumption and asked that the SSC provide additional rationale or reconsider its ABC recommendation.

The SSC reviewed the OFL, ABC, and OY yield streams that had previously been developed by NMFS for the October 2014 SSC meeting under various red tide scenarios (Table 8). Since the 2014 red tide event has since dissipated, and given estimates of the severity of the event provided by Dave Chagaris, SSC members agreed that the previous assumption of having the same impact of the 2005 event was not valid.

Table 8. Projections of gag OFL, ABC, and optimum yield (OY) under several scenarios of red tide impact in 2014. F_{MAX} was used as a proxy for F_{MSY} . ABC yields are based on a $P^* = 0.41$, and $OY = \text{yield at } 75\% \text{ of } F_{MAX}$. Yields are in pounds gutted weight.

Projections – OFL, ABC, and OY yield

A) Assumes no red tide mortality in 2014				E) Red tide mortality = 1.0X(2005) in 2014			
Year	OFL	ABC	OY	Year	OFL	ABC	OY
2015	6,770,000	6,430,000	5,210,000	2015	3,310,000	3,070,000	2,550,000
2016	5,840,000	5,570,000	4,750,000	2016	2,890,000	2,690,000	2,340,000
2017	5,380,000	5,130,000	4,570,000	2017	2,890,000	2,710,000	2,440,000
2018	5,100,000	4,860,000	4,500,000	2018	3,130,000	2,940,000	2,720,000
Equilibrium	4,450,000	4,210,000	4,460,000	Equilibrium	4,450,000	4,200,000	4,460,000

B) Red tide mortality = 0.25X(2005) in 2014				F) Red tide mortality = 1.25X(2005) in 2014			
Year	OFL	ABC	OY	Year	OFL	ABC	OY
2015	5,660,000	5,350,000	4,360,000	2015	2,760,000	2,530,000	2,130,000
2016	4,900,000	4,650,000	3,980,000	2016	2,420,000	2,230,000	1,960,000
2017	4,580,000	4,360,000	3,890,000	2017	2,500,000	2,330,000	2,110,000
2018	4,470,000	4,250,000	3,940,000	2018	2,810,000	2,630,000	2,440,000
Equilibrium	4,450,000	4,200,000	4,460,000	Equilibrium	4,450,000	4,200,000	4,460,000

C) Red tide mortality = 0.50X(2005) in 2014				G) Red tide mortality = 1.50X(2005) in 2014			
Year	OFL	ABC	OY	Year	OFL	ABC	OY
2015	4,740,000	4,450,000	3,640,000	2015	2,310,000	2,090,000	1,780,000
2016	4,100,000	3,880,000	3,330,000	2016	2,030,000	1,850,000	1,650,000
2017	3,920,000	3,710,000	3,320,000	2017	2,170,000	2,010,000	1,820,000
2018	3,950,000	3,740,000	3,460,000	2018	2,540,000	2,370,000	2,190,000
Equilibrium	4,450,000	4,200,000	4,460,000	Equilibrium	4,450,000	4,200,000	4,460,000

D) Red tide mortality = 0.75X(2005) in 2014			
Year	OFL	ABC	OY
2015	3,960,000	3,700,000	3,050,000
2016	3,440,000	3,230,000	2,790,000
2017	3,360,000	3,170,000	2,840,000
2018	3,500,000	3,310,000	3,060,000
Equilibrium	4,450,000	4,200,000	4,460,000

SSC members initially considered using projection scenario B, which assumes that the 2014 red tide event has 25% of the impact of the 2005 event. However, several SSC members felt that, based on the analysis by Dr. Chagaris, the 2014 red tide impacts were closer to zero than to 25%. After further discussion, SSC members concluded that if 2014 was an average year in terms of red tide impacts as suggested by the analysis, then any red tide based mortality is already accounted for in the natural mortality rate estimates. As a result, the SSC decided to use scenario A, no red tide mortality in 2014, on which to base OFL and ABC advice.

The SSC recommends that the OFL for gag grouper in the Gulf of Mexico be set at 0% of the 2005 red tide mortality event.

2015 - 6.77 mp gw

2016 - 5.84 mp gw

2017 - 5.38 mp gw

Motion passed 14-2.

Council staff again reminded the SSC that the Council prefers a constant catch ABC to a declining yield stream. Most SSC members felt that, for consistency with the king mackerel ABC recommendations, the control rule based ABCs should be based on the control rule. The Council would then have the option of setting a constant catch ACL. However, considering that the gag stock is fully rebuilt, the SSC considered recommending the long-term equilibrium yield as an ABC.

A motion to set ABC for gag grouper in the Gulf of Mexico at the equilibrium OFL of 4.45 mp gutted weight failed by a vote of 2 to 12. A subsequent motion to set the ABC for gag grouper in the Gulf of Mexico set at the equilibrium ABC level from model projections assuming 0 red tide mortality, which is 4.21 mp gw, also failed by a vote of 5 to 10.

The SSC considered setting the annual ABCs at the ABC levels generated by the control rule, but felt that the buffer between ABC and OFL was too small to provide protection against overfishing (exceeding OFL). Therefore, the SSC decided to recommend a yield stream based on the OY yields.

The SSC recommends that the ABC for gag grouper in the Gulf of Mexico be set at the OY level from model projections assuming 0 red tide mortality.

2015 - 5.21 mp gw

2016 - 4.75 mp gw

2017 - 4.57 mp gw

Motion passed unanimously.

Other Business

Reorganization of SSCs

Doug Gregory reviewed a proposed reorganization of the SSC. The Council currently has three standalone SSCs (Standing, Ecosystem, and Socioeconomic) plus several Special SSCs that normally meet in conjunction with the Standing SSC. The total SSC membership is more than 70 which far exceeds the number of members for any other Regional Fishery Management Council SSCs. Mr. Gregory is proposing to combine the three stand-alone SSCs, or at least the Standing and Ecosystem SSCs. The combined SSC would consist of 18 members, including 4 quantitative or assessment scientists, 3 ecosystem scientists, 3 anthropologists, 4 economists, and others. The Special SSCs would be retained. The SSC members would have staggered 3-year terms,

SSC members questioned having only 4 quantitative or assessment scientists given the heavy demand and time requirements for SSC members to serve on SEDAR stock assessment committees. One SSC member suggested that the SSC should include other specialties such as behavioral ecologists. Another SSC member noted that the Gulf SSC deals with more stocks than most other SSCs. He asked if the other SSCs were doing a better job than the Gulf SSC. Mr. Gregory responded that he did not know. An SSC member asked why the appointments would be staggered over three years. Mr. Gregory responded that it was to reduce the workload on staff. Currently, all SSC and AP appointments are reviewed every two years, requiring the Council and Council staff to review a large number of appointees and applicants. One SSC member recommended retaining the Socioeconomic SSC to address non-biological issues. Mr. Gregory suggested that it might be possible to create Special Socioeconomic SSC to address issues such as allocations.

Review of SEDAR Assessment Schedule

The SSC reviewed the SEDAR assessment schedule for 2016 and 2017. One SSC member suggested that triage should be part of the SEDAR workshop process in order to identify species for which assessment data exists.

The SSC discussed the timing and type of assessment for the next red snapper assessment. Benchmark and standard assessments require more time and resources than update assessments, but allow more flexibility in assessment inputs and parameters. A benchmark assessment would be required for major changes, otherwise a standard assessment could be done. Reasons for requesting a new benchmark assessment might include:

- MRIP adjustments may require re-analysis
- The effects of the BP oil spill might be more directly estimated
- New fishery-independent data sources should be available
- If the Council requests separate east and west Gulf stock assessments, the assessment would need to be revised, including developing separate status determination criteria for each regional stock.

It was noted that conducting a new assessment so soon after the current update assessment would only add a small amount of new data and would be unlikely to produce results much different than the current assessment. The SSC attempted to make several motions regarding when the next red snapper assessment should be conducted.

A motion that either a benchmark or standard red snapper assessment be conducted in 2016 utilizing 2015 data failed by a vote of 7 to 8. Another motion to request that a standard red snapper assessment be conducted in 2016 also failed by a vote of 6 to 6 with 2 abstentions. The SSC then passed the following motion.

The SSC recommends that a standard red snapper assessment be conducted in 2017.

Motion passed 11-5.

Discussion of Alternative Red Snapper MSY Proxies

At the request of the Council, the Science Center produced a series of red snapper projected yield streams at alternative F_{MSY} proxies of $F_{SPR26\%}$, $F_{SPR24\%}$, $F_{SPR22\%}$, and F_{MAX} equivalent to $F_{SPR20\%}$. These yields are shown in Tables 1 (for fishing at a constant F_{proxy} level) and Table 2 for fishing at a rate that will rebuild to the B_{proxy} biomass level by 2032. SSC members noted that the spawner-recruit relationship for red snapper is not well-determined, thus steepness was set at 0.99 in the model. Furthermore, the spawner-recruit relationship was not utilized to project future recruitment. As indicated above, the implicit assumption under such an approach is that future recruitment projected in the near term will resemble recruitment in the recent past, and the mean of recent recruitment (with recruitment deviations) is utilized in projections.

The SSC noted that MSY , hence F_{MSY} , could not be estimated directly for red snapper given the lack of a reliable spawner-recruit relationship. When steepness equals 1.0, F_{MSY} equals F_{MAX} . Therefore, the SSC earlier indicated F_{MAX} would be a poor proxy as well. This leaves the question of what is the best proxy to use for F_{MSY} . A proxy of $F_{SPR30\%}$ is commonly used for reef fish and was recommended by the SEDAR 38 review panel for Gulf king mackerel using similar rationale (i.e., no reliable spawner-recruit relationship and steepness of that function set to 0.99). The current F_{MSY} proxy for red snapper is $F_{SPR26\%}$ differs from $F_{SPR30\%}$, which may create some confusion. However, this disparity ($F_{SPR26\%}$ vs. $F_{SPR30\%}$) resulted from analysis done by the SEFSC following SEDAR 7 in 2005 when examining maximum sustainable marginal yield to attempt to reduce effort among the various fisheries and fleets that contribute to the annual red snapper harvest.

If a proxy different than the current proxy of $F_{SPR26\%}$ is adopted by the Council, the time allowed in the rebuilding plan would also likely change because the time to rebuild to the biomass proxy level in the absence of fishing mortality (F_0) would be less. Consequently, the rebuilding timelines for each proxy level would need to be recomputed, and Table 2 would need to be revised. If the time to rebuild under F_0 is less than ten years, then the Magnuson-Stevens Act requires the plan to rebuild the stock in ten years or less. This could potentially result in the need for more restrictive management measures under the rebuilding plan even at lower biomass target levels. NMFS staff will produce revised estimates of the revised time and yields to rebuild to various proxy levels including estimates of the times needed under F_0 .

SSC Meeting Dates and Locations for 2015

The SSC reviewed the tentative schedule of meeting dates in 2015. SSC meetings are generally scheduled three weeks before each Council meeting. A few SSC members indicated possible conflicts with some of the dates. Several SSC members asked if some of the SSC meetings could be held in locations other than Tampa. A suggestion was made to hold a meeting where shrimp issues are discussed somewhere between Galveston and Biloxi. Mr. Gregory stated that staff would look into having some meetings at other locations.

SSC Members Present

Standing SSC

William Patterson, Chair
*Luiz Barbieri, V. Chair
*Harry Blanchet
Benjamin Blount
Shannon Cass-Calay
Bob Gill
Walter Keithly
Kai Lorenzen
Sean Powers
Jim Tolan
John Ward

Special Reef Fish SSC

Jason Adriance
Erik Broussard
Robert Ellis
John Mareska
Brooke Shipley-Lozano

Council Staff

Steven Atran
Charlotte Schiaffo
Doug Gregory
John Froeschke
Ryan Rindone
Assane Diagne

Council Member

Camp Matens

Others Present

David Chagaris-FWC
Roy Crabtree-NMFS
Michael Drexler-OC
Martin Fisher
Claudia Friess
Susan Gerhart -NMFS
Chad Hanson-PEW
Van Hubbard
TJ Marshall-OC
Julie Neer-SEDAR
Dennis O'Hern
Joe O'Hop-FWC
Clay Porch-SEFSC
Andy Strelcheck-NMFS
Ted Switzer

* Present on first two days only