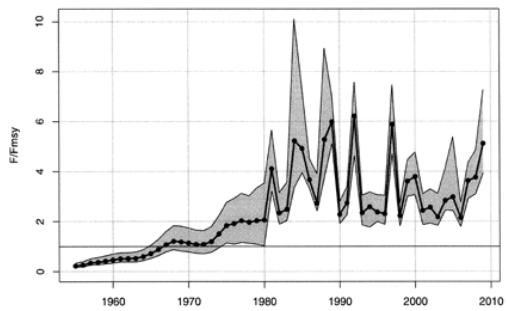
RED SNAPPER ADAPTIVE MANAGEMENT
Prepared by SAFMC Staff

Red Snapper Adaptive Management – a new approach involving fishermen to reduce the mortality from releasing red snapper and limiting the number of red snapper that are caught and landed. This would be a test case to determine if total mortality can be held below the allowed level to prevent overfishing. If this does not work, and total mortality exceeds the allowed level, future open seasons would be modified and/or eliminated. This new approach requires that we move towards a hunting mindset versus the current derby mentality with short open seasons.

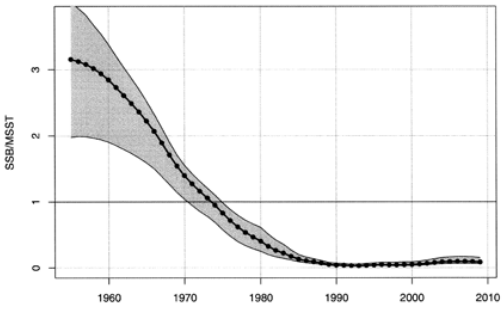
Problem – assessments prior to SEDAR indicated overfishing/overfished problems could be solved with bag/size limits to reduce fishing mortality. The Council implemented each recommendation and the fishery was first managed with a 12-inch size limit effective on 8/31/83, and then with a 2-fish recreational bag limit and a recreational/commercial 20-inch size limit beginning on 1/1/92. However, the population did not improve due to a higher discard mortality rate than known at the time and low recruitment.

SEDAR 15 (2008) indicated overfishing/overfished and the Council implemented a 34-year rebuilding program beginning in 2010 with the expectation to have the stock rebuilt in 2044 (Amendment 17A; July 2010). Effective January 4, 2010, the Council prohibited the harvest and possession of red snapper in the South Atlantic Exclusive Economic Zone (EEZ) (initially through an interim rule), proposed areas that were to be closed to all snapper grouper fishing (4,827 square miles), and required use of circle hooks north of 28 degrees (effective 3/3/11).

SEDAR 24 (2010) was prepared to evaluate a potential strong year class that occurred since the SEDAR 15 assessment was completed and to incorporate the results of extensive age sampling conducted in 2009. The new assessment also evaluated some of the key uncertainties from the prior effort, such as the historic landings levels, fishery selectivity, and discard mortality rates. Results between the two assessments were not greatly different. Both assessments indicate the red snapper stock is overfished and undergoing overfishing. The most recent assessment indicates that the stock biomass has benefited from two recent strong recruitment years and that the stock, while still overfished, is in better condition that what was estimated in SEDAR 15. In addition, the magnitude of overfishing is less than indicated in the previous assessment. MSY = 1,842,000 pounds whole weight



Overfishing if above 1.



Overfished if below 1.

In Regulatory Amendment 10 (January 2011), the Council was able to eliminate the total closed area (4,827 square miles) before it was implemented but kept the prohibition on harvest and possession of red snapper. Projections indicated the stock would rebuild if total mortality remained below the ABC with the total prohibition on red snapper alone.

Through the process established in Amendment 28 (January 2013), the Council was able to allow some short season openings in 2012, 2013, and 2014 since the total mortality (discards + fish caught and landed) remained below the ABC. The process from Amendment 28 is described in **Attachment 1**. Unfortunately, total mortality during the 2014 opening was 205,859 red snapper, while the ABC was 106,000 fish, almost twice the number of fish allowed to be killed (**Table 1**). Therefore, there is no open season in 2015.

Table 1. Summary of estimates of U.S. South Atlantic landings and discards for red snapper in the 2014 calendar year (Source: SEFSC 5/22/15).

Sector	Landings (numbers)	Landings (whole wt)	Discards (numbers)	Dead Discards (numbers)	Total Removals (numbers)	Total Removals (pounds*)
Commercial	10,827	61,498	29,167	14,000	24,827	141,017
Headboat	2,952	22,450	46,612	19,111	22,063	167,899
Charter	2,749	-	43,586	17,870	20,619	156,911
Private	25,982	-	288,124	112,368	138,350	1,052,844
Total	42,510	-	407,489	163,349	205,859	1,518,671

*Commercial average weight = 61,498/10,827 = 5.68 pounds per fish
Recreational average weight = 22,450/2,952 = 7.61 pounds per fish

The harvest and discard levels observed in 2014 indicate a much bigger problem. Discards alone were 163,349 fish, greater than the 2014 ABC of 106,000 fish, the 2015 ABC of 114,000 fish, and the 2016 ABC of 121,000 fish. Even more of an issue is that the total removals (discards + landings) in 2014 were 1,517,671 pounds whole weight, slightly below the MSY of 1,842,000 pounds whole weight. This means **we are now removing about what can be removed on an annual basis!** Regardless of the SEDAR 41 results (results to be presented to the Council in June 2016), we can't kill more fish than were killed in 2014. So, we either continue to waste red snapper through discards and very short/no openings or we find a new way to manage this very valuable fishery resource.

An overview of the catches from 1992 through 2014 are shown in **Attachment 2**. The regulations over time are shown at the bottom of the table.

Potential Solution – we must think outside of the box! We must find a way for fishermen to help solve this problem. Here is an approach to consider:

1. Set a fixed opening for 2016 with a legal limit of 1 fish/person/trip for both recreational and commercial fishermen while asking fishermen to voluntarily limit themselves to no more than 5/season. The season could open for May/June or July/August or September/October (after peak spawning) to coincide with MRIP Waves for data collection or 1 month (May, June, July or August) with some other method of data collection (e.g., catch cards). A longer open season could reduce the derby mentality and the desire to get what I can now during a short open season. Estimating catch is difficult and if the open season coincides with the MRIP waves we could have reporting for a 2 month wave **OR** modify MRIP reporting if 1 month or use a logbook or catch card.
2. Request fishermen limit discards by voluntarily staying away from red snapper as much as they can; the Council will recommend areas to avoid based on recent catch/discards by commercial and headboat statistical grids.
3. Request fishermen voluntarily avoiding highgrading.
4. Request fishermen voluntarily stop fishing for red snapper after they catch their first red snapper and retain the first red snapper they catch. So, fishermen would put their rod down after catching their 1st red snapper to avoid bycatch/discards or move to fish for other species with little to no bycatch of red snapper.
5. Request fishermen voluntarily **OR** Require use of a fish descender to increase the survival rate of released red snapper.
6. Encourage use of de-hooking devices.
7. Modify the circle hook requirement to require use of "non-offset" circle hooks.
8. The actual mortality from 2016 will be compared with the 2016 ABC of 121,000 red snapper (and the new ABC from the new stock assessment) and the ABC for 2017 to determine the length of the 2017 season.
9. If fishermen cooperate, they would increase the chance that they would have another (and future) opening under a 1 fish bag limit. So the benefit from their voluntary cooperation may be a fixed open season. Depending on the harvest level, the Council could look at a 2 fish bag limit in the future but the first priority is to ensure total mortality remains below the specified level under a 1 fish bag limit.
10. The issue of separate limits for recreational and commercial fishermen would be examined after the 2016 season to determine the feasibility of a commercial trip limit.

Timing Considerations:

1. To affect the 2016 season, the Council would need to approve a regulatory amendment at the December 2015 meeting and request NMFS expedite review/implementation so that regulations are effective prior to the 2016 opening. The timing favors a later season opening to have the regulations in place.
2. The regulatory amendment would need to be simple and only include a bag limit and dates for a season opening. A preferred alternative would need to be chosen at the September 14-18, 2015 meeting on Hilton Head Island, SC.
3. Webinar public hearing(s) would be held in November 2015.
4. The Council would take comments and approve for formal review/implementation during the December 7-11, 2015 meeting in Atlantic Beach, NC.

COMMITTEE ACTION:

OPTION 1. DIRECT STAFF TO WORK ON A REGULATORY AMENDMENT TO SET A 1 FISH BAG LIMIT FOR RECREATIONAL AND COMMERCIAL FISHERMEN AND OPEN THE 2016 SEASON DURING SEPTEMBER/OCTOBER.

OPTION 2. DIRECT STAFF TO WORK ON A REGULATORY AMENDMENT TO SET A 1 FISH BAG LIMIT FOR RECREATIONAL AND COMMERCIAL FISHERMEN AND OPEN THE 2016 SEASON DURING JULY/AUGUST.

OPTION 3. DIRECT STAFF TO WORK ON A REGULATORY AMENDMENT TO SET A 1 FISH BAG LIMIT FOR RECREATIONAL AND COMMERCIAL FISHERMEN AND OPEN THE 2016 SEASON DURING MAY/JUNE.

OPTION 4. DIRECT STAFF TO WORK ON A REGULATORY AMENDMENT TO SET A 1 FISH BAG LIMIT FOR RECREATIONAL AND COMMERCIAL FISHERMEN AND OPEN THE 2016 SEASON DURING MAY, JUNE, JULY, AUGUST, SEPTEMBER, OR OCTOBER (COUNCIL TO SPECIFY 1 MONTH).

OPTION 5. OTHERS??

References

SAFMC (South Atlantic Fishery Management Council). 2010. Amendment 17A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2011. Regulatory Amendment 10 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SAFMC (South Atlantic Fishery Management Council). 2013. Amendment 28 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Final Environmental Assessment, Initial Regulatory Flexibility Analysis, Regulatory Impact Review, and Social Impact Assessment/Fishery Impact Statement. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

SEDAR 15. 2008. Stock Assessment Report 1 (revised March, 2009). South Atlantic Red Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEDAR 24. 2010. Stock Assessment Report. South Atlantic Red Snapper. Available from the SEDAR website: www.sefsc.noaa.gov/sedar/

SEFSC. 2015. Total removals of red snapper (*Lutjanus campechanus*) in 2014 from the U. S. South Atlantic. NMFS Southeast Fisheries Science Center (SEFSC). Prepared May 22, 2015.

ATTACHMENT 1

Red snapper season process as described in Snapper Grouper Amendment 28 (SAFMC 2013)

If Implemented, How Would the Process Work?

The acceptable biological catch (ABC) for 2012 was 86,000 fish. Estimated landings and dead discards that occurred in 2012 will be available around March 2013. If the National Marine Fisheries Service (NMFS) determines that the estimated landings and dead discards that occurred in 2012 are equal to or greater than 86,000 fish, no harvest would be allowed in 2013.

If NMFS determines that the estimated landings and dead discards that occurred in 2012 is less than 86,000 fish, harvest *may* be allowed in 2013. (Note: The commercial fishing season and the recreational fishing seasons would not open if their 2013 projected season length is three days or less.)

The 2013 ABC is from rebuilding projections contained in Table 9c of a document titled "SEDAR-24 South Atlantic Red Snapper: Management quantities and projections requested by the SSC and SERO" and in Table 1-1 of this document. The 2013 ABC equals 96,000 fish. NMFS would calculate the total annual catch limit (ACL) as per the formula implemented thorough this amendment and the sector-ACLs as per the South Atlantic Council's allocation formula. NMFS would project the length of the commercial and recreational fishing seasons.

If harvest is allowed, NMFS would announce the pre-determined commercial and recreational fishing year start dates. The end of the commercial red snapper season would close when the sector ACL is met or projected to be met. The end of the recreational red snapper season would be projected and announced before the start of the recreational season. The NMFS Regional Administrator has the authority to delay the opening of red snapper fishing seasons in the event of a tropical storm or hurricane affecting the South Atlantic Council's area of authority.

The process would be repeated each year unless modified.

Table 1-1. Projection results (expected values)/ABCs with $F=0.98XF_{30}$, extended from assessment model configuration with component weights as in the AW report, but headboat index weight increased to 0.30.

	Discard Mortalities (1000 fish)	Landings (1000 fish)	Total (1000 fish)
2012	41	45	86
2013	44	52	96
2014	47	59	106
2015	50	64	114
2016	52	69	121
2017	54	74	128
2018	56	79	135
2019	58	84	142

ATTACHMENT 2

Total removals of red snapper, fishing mortality rate (F), spawning biomass (SSB), overfishing level (F/Fmsy), overfished level (SSB/MSST), and removals compared to MSY (Removals/MSY).

Year	Tot Rem (num)	Total Rem (lbs ww)	F	SSB	F/Fmsy	SSB/MSST	Removals/MSY
1992	116,240	1,639,050	1.103	4.65	6.197	0.032	0.890
1993	89,830	920,870	0.415	4.53	2.331	0.031	0.500
1994	97,140	1,070,740	0.458	5.18	2.573	0.036	0.581
1995	78,780	913,050	0.42	5.97	2.360	0.041	0.496
1996	54,940	718,520	0.409	6.87	2.298	0.048	0.390
1997	100,290	1,655,830	1.044	6.39	5.865	0.044	0.899
1998	57,040	707,720	0.394	6.19	2.213	0.043	0.384
1999	162,340	1,523,060	0.64	6.62	3.596	0.046	0.827
2000	197,740	1,785,480	0.672	6.91	3.775	0.048	0.969
2001	178,540	1,663,090	0.432	7.92	2.427	0.055	0.903
2002	158,520	1,653,300	0.454	9.54	2.551	0.066	0.898
2003	124,160	1,211,420	0.386	11.34	2.169	0.079	0.658
2004	147,440	1,631,430	0.503	12.66	2.826	0.088	0.886
2005	109,000	1,358,900	0.528	13.33	2.966	0.093	0.738
2006	96,480	969,230	0.38	13.83	2.135	0.096	0.526
2007	244,540	1,997,640	0.644	13.81	3.618	0.096	1.084
2008	320,800	3,105,780	0.668	13.62	3.753	0.095	1.686
2009	274,740	3,356,090	0.908	12.43	5.101	0.086	1.822
2010	71,394	380,036					
2011	61,405	403,930					
2012	80,515	506,498					
2013	72,881	463,857					
2014	205,859	1,322,547					

Regulations:

8/31/83	12” size limit rec & com
1/1/92	20” size limit rec & com; 2-fish rec bag limit
1/4/10	Prohibit harvest & possession
3/3/11	Required circle hooks North of 28 degrees
2012	Short rec & com open season
2013	Short rec & com open season
2014	Short rec & com open season
2015	No rec & com open season